VSB —TECHNICAL UNIVERSITY OF OSTRAVA

FACULTY OF ECONOMICS

DEPARTMENT OF FINANCE

Zhodnocení rentability společnosti Škoda Auto a.s.

Assessment of Profitability of the Company Škoda Auto a.s.

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Ostrava 2019

VŠB - Technical University of Ostrava
Faculty of Economics
Department of Finance

Bachelor Thesis Assignment

Student:	**Min Gao**
Study Programme:	B6202 Economic Policy and Administration
Study Branch:	6202R010 Finance
Title:	Assessment of Profitability of the Company Škoda Auto a.s. Zhodnocení rentability společnosti Škoda Auto a.s.
The thesis language:	English

Description:

1. Introduction
2. Description of the Profitability Methodology
3. Basic Financial Characteristic of the Škoda Auto a.s. Company
4. Analysis of the Profitability of the Škoda Auto a.s. Company
5. Conclusion

Bibliography
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PETERSON DRAKE, Pamela and Frank, J. FABOZZI. *Analysis of Financial Statements*. New York: Wiley, 2012. ISBN 978-1118299982.

Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

Supervisor: **Ing. Petr Gurný, Ph.D.**

Date of issue: 23.11.2018
Date of submission: 10.05.2019

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The declaration:

"I hereby declare that I have elaborated the entire thesis including annexes myself."

Ostrava date.....1. 5. 2019

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Contents:

1 Introduction

In the rapidly developing society, the enterprise plays a vital part in the economy, and the main aim for the company is to make profit as more as possible. Therefore, the assessment of probability shows somehow the degree of the firm's developing ability nowadays, and it can also help the firm to predict the future's situation and make better strategies.

The objective of the work is to analyze the financial status of Skoda Auto a.s., which of a hundred's year history car producing company in Czech Republic, focusing on the assessment of probability.

In chapter 1, there will be a brief description of whole thesis and the main structure of the thesis. Furthermore, in chapter 2, there will be the theoretical part from financial statement to financial analysis. The financial statement varies from the balance sheet, the income statement and the cash flow statement. The financial analysis, which based on the data presented in the financial statement, varies from the common -size analysis including the horizontal analysis and the vertical analysis; the financial ratio analysis which includes the probability ratio, the liquid ratio, the solvency ratio and the asset turnover ratio; and the pyramidal decomposition and influence quantification.

In chapter 3, back to the financial analysis of the firm, there will be the basic introduction of the firm about its history, culture and product. Combined with the enterprise's financial characteristic, we select the financial statements of the firm from 2013 to 2017. using the common-size analysis and the financial ratio analysis, we will come to a result about the degree of Skoda's development of and its market situation.

In chapter 4, we will make assessment of probability of the firm, using the method of pyramidal decomposition and influence quantification. Firstly, we will decomposition ROA and ROE, and then evaluate the influence of component ratio

by Logarithmic decomposition method. Then we will use the Sensitivity analysis to find the reaction of the ROA and ROE to the variables.

In chapter 5, the attention will be paid to the summarize of the whole thesis and trying to find out the internal reasons of the varying of probability in Skoda every year.

2 Description of the Profitability Methodology

In this part, we will introduce the theoretical methodology of financial statement, the introduction of the balance sheet, the income statement and the cash flow statement will be introduced in order. Based on the financial statement, the introduction of financial analysis will be described in order, the common-size analysis, the financial ratio analysis and pyramidal decomposition will partly be mentioned by graph and formula.

2.1 The introduction of financial analysis

[1]The financial analysis is a process of selectin, evaluation and interpreting financial data, and it's based on accounting and reporting materials and other relevant information, the use of a series of specialized analytical techniques and methods for enterprises and other economic organizations in the past and present related fund-raising activities, investment activities, business activities, distribution activities of profitability, operational capacity, Economic management activities that analyze and evaluate the status of solvency and capacity to grow.

The aim of financial analysis can be divided into two parts, the first is to formulate the assessment of the company's present, discipline that provides accurate information or basis for investors, creditors, operators and other organizations or individuals concerned with the enterprise to understand the past, evaluate the current situation of the enterprise, and on the other hand, the second goal is to forecast the future financial position, and predict the future of the enterprise to make correct decisions. There are many methods and analytical tools for financial analysis, and the specific application should be based on the purpose of the analyst.

The methods of financial analysis including three categories: common-size analysis, it includes horizontal analysis and vertical analysis; financial ratio analysis,

[1] Source: Peterson (2012, p4)

in this thesis we will show the basic formula, and the pyramidal decomposition and influence quantification analysis.

2.2 The financial statement

Financial statement is periodic structure statements of the financial position, operating results and cash flow of the enterprise. For investors, it provides information about the profitability capacity and dividend policy to facilitate them to make the right investment decision. For creditors, it provides information about the capital structure and asset status to them to make right credit decision. For financial managers, it evaluates the performance of the company and provides the basis for the decision-making and management of future production and operation of enterprise. For other interested outside parties, it also provides many useful information about the company they want to realize.

There are three basic financial statements which provide financial information about company: balance sheet; income statement (profit/loss statement); cash flow statement.

2.2.1 The balance sheet

It summarizes the assets of a company, the value of these assets and the mix of financing used to finance these assets at a given point in time, the assets of a company mean the assets which are generated either by purchase or business activities or financing activities. The assets can be classified as the fixed assets and the current assets, such as the inventories, receivables, goods, cash, other short-term assets. The equity and liabilities of a company is a mix of capital for financing of company´s assets. The equity represents the shareholder´s investment s into company, including the capital belonging to the owners or shareholders of the company and the contribution of the owners who buying shares or by company´s profit and the retained earnings; while the liability represents money, that has been borrowed and must be repaid back at some predetermined date,

And it can be classified: current liabilities including borrowed money that must be

paid back within 12 months, accounts payable, which is the credit extended by suppliers to a company when it purchases inventories, accrued expenses, which is the short-term liabilities but not yet paid, short-term notes, which is the money borrowed from a bank payable within 12 months, long-term liabilities, includes money that has been borrowed for longer than 12 months and also the loans from banks, issued bonds, etc. From above definition follows this formula:

$$Total\ assets = Total\ equity + Total\ liabilities \quad (2.1)$$

In this formula, it is obvious that assets are equal to liabilities surplus shareholders' equity. Here we put a standardized balance sheet below and show a clear structure of this kind of statement.

Table2.1 The Sample Company Balance Sheet

BALANCE SHEET		
Item		Item
TOTAL ASSETS		**TOTAL EQUITY+LIABILITIES**
Long-term assets		**Equity**
Tangible assets		Share capital (par value)
Intangible assets		Contributed capital (excess par value)
Financial investments		Retained earnings
Other long-term assets		
Current assets		**Liabilities**
Inventories		Short-term borrowings
Accounts receivable		Long-term debt
Marketable securities		Accounts payable
Other short-term assets		Notes payable
Cash and cash equivalents		Accrued expenses

Source: Dolorosa (2014, p51)

2.2.2 Income statement

The income statement also called as the profit/loss statement, P/L statement. It provides information on the revenues and costs of the company and resulting profit or

loss during a period. Of the three main types of financial statements, the income statement is the most fundamental, because it tells the story of how the business made money or sometimes how it failed to make money. We'll look at the balance sheet and the cashflow statement in future tutorials. The basic equation underlying the income statement is:

$$Net\ income/Loss = Revenues - Costs - Expenses \qquad (2.2)$$

In this formula, the revenues are the amounts charged for the delivery of goods or services in the ordinary activities of the company, while the costs and expenses: amounts that must be spent in the ordinary activities of the company. Here we put an example of income statement below:

Table2.2. An example of income statement

Symbol	Item
NS	+Net revenue
C	-Costs of goods sold
Co	-Other operating costs (sales, marketing, administrative, etc.)
OI	=**Operating income**
Rf	+Financial revenues
Cf	=Financial costs
FI	=**Pre-tax income**
t	-Income tax
NI	=**Net income**

Source: Dolorosa (2014, p54)

During the management of company, there will be many kinds of activities, such as the operating activities, and it's called operating activities, which means the daily activities of the running process of the company. For example, the wages and salaries paid to the worker due to their working load, and the material contributes to the producing, the electricity used during the producing process; the financing activities, where the financial revenues and financial costs and expenses are compare, the financial

revenuers includes the interest received, the revenues from owned securities, and the financial costs including the interest paid and the coupons paid. After knowing these two activities in the income statement, the main subtotals can be calculated in two different activities. The sum of operating and financing income can be expressed as the profit before tax, and the tax is calculated in the following formula:

$$T = EBT \times TR \tag{2.3}$$

The T in the formula indicates the company's tax, and the EBT is the earning after tax of the company, the t is the corporate tax rate.

2.2.3 Cash flow statement

[2]The cash flow statement is the source of cash to the firm from its activities and usage of these cash flows during a period. The cash flow statement explains the differences between beginning and ending balance of cash of a company, summarizes the information about cash inflows and cash outflows during a period

Similar with the income statement, the data in the cash flow statement can be divided into three parts, the first is the operating activity which is related with daily business of the enterprise. For example, the company sells its products and services. And then it receives cash immediately or collects receivables later. We call it cash inflows. Outflows are in the form of corresponding operation expenses, such as materials, salaries and electricity fees. Second is the financial activities, involves all inflows and outflows associated with purchasing and selling of long-term assets (tangible assets, intangible assets, financial investments). Third is investing activity which is referring to purchase and sell of capital. The cash inflows and outflows are formed in the case of company 'capital change. When an enterprise issues shares and bonds or borrow long-term debts form others, cash flourish into this enterprise. Similarly, when an enterprise pays dividends and repays bonds and borrowings, cashflow from this enterprise. Basic formulas:

[2] Source: Dluhosova (2014, P55)

$$Net\ cash\ flow = CF\ from\ three\ basic\ activities \quad (2.4)$$

Three basic activities are the operating activities, the investing activities and the financing activities.

Table2.3 A recording method of cash flow activities

Cash and cash equivalents at the beginning of the year
+/- CF from operating activities
+/- CF from investing activities
+/- CF from financing activities
Cash and cash equivalents at the end of the year

The CF here means the cash flow of the corporate.

2.2.4 The connection between financial statements

Financial statements are summaries of the operating, financing, and investment activities of a business. It provides information useful to both investors and creditors in making credit, investment, and other business decisions.

Among three different financial statements, the balance sheet served as a spot of the financial situation in a given point of time, the left part of balance sheet shows the usage of assets, and the sources of assets are mentioned in the right part in the balance sheet, while the cash flow statement contributing to recognize the usage of cash, which is the most liquid current asset of the corporate, trying to explain the inflow and outflow by three different activities. The income statement indicates the retained equity of the firm by illustrating the revenues and the costs of the firm in a period. By selecting the information of cashflow and the income in a given period, usually one year, we can finally recognize the exact financial data in a given point of time in the balance sheet.

2.3 The methods of financial analysis

In this subchapter, we will introduce the methods of financial analysis, which basically has four methods, including the common size analysis, the financial ratio

analysis and pyramidal decomposition and influence quantification.

2.3.1 The common-size analysis

The common size analysis involves expressing financial data, including entire financial statements, in relation to a single financial statement item, or base. Items used most frequently as the bases are total assets or revenue. Common-size analysis creates a ratio between every financial statement item and the base item.

The common-size analyses focus on analyzing the financial statement data and their changes over the time. It is aimed at identifying the trends and major differences. The main type includes the horizontal common-size analysis and the vertical common-size analysis.

Horizontal common-size analysis focuses on the changes of financial statements data during a period to find increase or decrease of some selected indicator. It can be a time point of view to measure evolutions of a company's financial position and give an objective evaluation. While the abusolute or the relative change of the horizontal analysis will shoe directing the change of data.

Vertical common-size analysis is the analysis of the changes in the proportions of selected benchmarks. For example, the changes of total revenues, total assets, total liabilities in different years, showed the bar chart by computing the increase or decrease in percentage terms of each item from the prior year, highlights items that have changed unexpectedly or unexpectedly remained unchanged.

2.3.2 Financial ratio analysis

The financial ratio analysis is a comparison of financial data in the form of financial ratios to assess the financial health of the company, which are calculated from financial data and market data, among which is relationship and the ratio has some economical interpretation.

There are different groups of ratios, such as profitability ratios, liquidity ratios, solvency ratios, activity ratios, etc. These ratios will be introduced in the following part.

There are the groups of financial ratios:

Profitability ratios

[3] The profitability ratio analyzes the company´s ability to generate profit from invested capital, Profitability ratios are a class of financial metrics that are used to assess a business's ability to generate earnings relative to its revenue, operating costs, balance sheet assets, and shareholders' equity over time, using data from a specific point in time.

For most profitability ratios, having a higher value relative to a competitor's ratio or relative to the same ratio from a previous period indicates that the company is doing well. Ratios are most informative and useful when used to compare a subject company to other, similar companies, the company's own history, or average ratios for the company's industry. Profitability ratios measure the ability to generate profit from invested capital in the form of return during a period (in %), the higher the profitability ratios, the better competitive position of the company Basic ratios:

Margin Ratios: Profit Margin

Different profit margins are used to measure a company's profitability at various cost levels, including gross margin, operating margin, pretax margin, and net profit margin. The margins shrink as layers of additional costs are taken into consideration, operating margin is the percentage of sales left after covering additional operating expenses. The pretax margin shows a company's profitability after further accounting for non-operating expenses. Net profit margin concerns a company's ability to generate earnings after taxes.

$$NPM = \frac{EAT}{R} \tag{2.5}$$

A high operating profit margin means that the company has good cost control and/or that sales are increasing faster than costs, which is the optimal situation for the company. Operating profit margin is calculated as:

$$OPM = \frac{EBIT}{R} \tag{2.6}$$

[3] Source: Dluhosova (2014, P79)

So, if an operating margin increasing faster than the gross margin, it indicates that the company has improvements in controlling operating costs, such as administrative overheads. On the contrary, declining of operating profit margin indicates that the product's costs control of the company is deteriorating.

Return Ratios: Return on Assets

Profitability is assessed relative to costs and expenses, and it is analyzed in comparison to assets to see how effective a company is in deploying assets to generate sales and eventually profits. The term return in the ROA ratio customarily refers to net profit or net income, the amount of earnings from sales after all costs, expenses, and taxes. The more assets a company has amassed, the more sales and potentially more profits the company may generate. As economies of scale help lower costs and improve margins, returns may grow at a faster rate than assets, ultimately increasing return on assets.

$$ROA = \frac{EBIT}{A} \tag{2.7}$$

Return Ratios: Return on Equity

ROE is a ratio that concerns a company's equity holders the most since it measures their ability to earn a return on their equity investments. ROE may increase dramatically without any equity addition when it can simply benefit from a higher return helped by a larger asset base. As a company increases its asset size and generates a better return with higher margins, equity holders can retain much of the return growth when additional assets are the result of debt use.

$$ROE = \frac{EAT}{E} \tag{2.8}$$

Return Ratios: Return on Invested Capital

Return on capital (ROIC) is an indicator used to assess the historical performance of a company or its business unit. Discounted cash flow, as we know, determines the ultimate value of any company, and it is also one of the most important indicators of the company's assessment. ROIC is calculated as:

$$ROIC = \frac{EBIT(1-TR)}{C} \tag{2.9}$$

The return on capital, based on common sense, is broadly defined as the surplus formed by an enterprise using capital to obtain income net of contractual costs, on the basis of which it is reported to further decompose the return on capital into two parts of the capital owner's earnings and social gains.

liquidity ratios

Liquidity ratios measure company´s ability to meets its immediate and short-term obligations and they are an important class of financial metrics used to determine a debtor's ability to pay off current debt obligations without raising external capital. Liquidity ratios measure a company's ability to pay debt obligations and its margin of safety through the calculation of metrics including the current ratio, quick ratio, and operating cash flow ratio.

Liquidity is the ability to convert assets into cash quickly and cheaply. Liquidity ratios are most useful when they are used in comparative form. This analysis may be internal or external. For example, internal analysis regarding liquidity ratios involves using multiple accounting periods that are reported using the same accounting methods. Comparing previous time periods to current operations allows analysts to track changes in the business. In general, a higher liquidity ratio shows a company is more liquid and has better coverage of outstanding debts. Alternatively, external analysis involves comparing the liquidity ratios of one company to another or an entire industry. This information is useful to compare the company's strategic positioning in relation to its competitors when establishing benchmark goals. Liquidity ratio analysis may not be as effective when looking across industries as various businesses require different financing structures. Liquidity ratio analysis is less effective for comparing businesses of different sizes in different geographical locations.

The Current Ratio

The current ratio measures a company's ability to pay off its current liabilities (payable within one year) with its current assets such as cash, accounts receivable and inventories. The higher the ratio, the better the company's liquidity position:

$$Current\ Ratio = \frac{Current\ assets}{Current\ liabilities} \quad (2.10)$$

The Quick Ratio

The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets and therefore excludes inventories from its current assets. It is also known as the "acid-test ratio":

$$Quick\ Ratio = \frac{Current\ assets - inventories}{Current\ liabilities} \quad (2.11)$$

The Cash Ratio

Cash ratio just includes highly marketable short-term investments and cash. It usually represents a reliable measure of an individual entity's liquidity in a crisis situation. Cash ratio is calculated as:

$$Cash\ Ratio = \frac{cash + cash\ equivalent}{current\ liabilities} \quad (2.12)$$

Solvency ratios

Solvency ratios measure company´s ability to meets its long-term obligations and it is a key metric used to measure an enterprise's ability to meet its debt obligations and is used often by prospective business lenders. The solvency ratio indicates whether a company's cash flow is enough to meet its short-and long-term liabilities. The lower a company's solvency ratio, the greater the probability that it will default on its debt obligations. The solvency ratio is calculated by dividing a company's after-tax net operating income by its total debt obligations. The net after-tax income is derived by adding non-cash expenses, such as depreciation and amortization, back to net income. these figures come from the company's income statement. Short-term and long-term liabilities are found on the company's balance sheet.

Debt-to-equity ratio measures the amount of debt capital relative to equity capital. The debt to equity ratio is calculated as:

$$Debt\text{-}to\text{-}equity = \frac{Total\ debt}{E} \quad (2.13)$$

Interest coverage ratio measures the number of times a company's EBIT could cover its interest payments. A higher interest coverage ratio indicates stronger solvency,

offering greater assurance that the company can service its debt from operating earnings.

Interest coverage ratio is calculated as:

$$Interest\ coverage = \frac{EBIT}{Interest\ paid} \tag{2.14}$$

Asset management ratios

Asset management ratios measure the efficiency of assets usage, Asset Management Ratios attempt to measure the firm's success in managing its assets to generate sales. For example, these ratios can provide insight into the success of the firm's credit policy and inventory management. These ratios are also known as Activity or Turnover Ratios.

Receivables Turnover and Days' Receivables

Accounts Receivables Turnover

The Receivables Turnover and Days' Receivables Ratios assess the firm's management of its Accounts Receivables and, thus, its credit policy. In general, the higher the Receivables Turnover Ratio the better since this implies that the firm is collecting on its accounts receivables sooner. However, if the ratio is too high then the firm may be offering too large of a discount for early payment or may have too restrictive credit terms. The Receivables Turnover Ratio is calculated by dividing Sales by Accounts Receivables:

$$ART = \frac{R}{Accounts\ Receivable} \tag{2.15}$$

Average Collection Period

The Days' Receivables Ratio is calculated by dividing the number of days in a year, 365, by the Receivables Turnover Ratio. Therefore, the Days' Receivables indicates how long, on average, it takes for the firm to collect on its sales to customers on credit. This ratio is also known as the Days' Sales Outstanding (DSO) or Average Collection Period (ACP):

$$ACP = \frac{Accounts\ Receivable}{R} \cdot 360 \tag{2.16}$$

Inventory turnover

Inventory turnover is the core operations for many entities. Inventory turnover indicates the resources tied up in inventory and can also be used to indicate inventory management effectiveness. The higher the inventory turnover ratio, the shorter the period that inventory is held:

$$IT = \frac{Costs\ of\ goods\ sold}{average\ inventory} \tag{2.17}$$

Total Assets turnover

Total Assets turnover measures the company's overall ability to generate revenues with a given level of assets. A higher ratio indicates greater efficiency. A lower asset turnover ratio can be an indicator of inefficiency or of relative capital intensity. Total assets turnover is calculated as:

$$TAT = \frac{R}{TA} \tag{2.18}$$

2.3.3 Pyramidal decompositions and influence quantification

In this part, based on what we have mentioned about the financial ratios, we will introduce the method of pyramidal decompositions and influence quantification in order to find the order of influence to the changes in the basic ratio.

Pyramidal decompositions

Pyramidal decompositions enable to analyze what drives the value of financial ratios, in other words, what factors have impact on its value or evolution. One of the basic tasks for financial analysis is to search for the factors which mostly contribute to changes of the financial ratios.

A DuPont analysis is used to evaluate the component parts of a company's return on equity (ROE). This allows an investor to determine what financial activities are contributing the most to the changes in ROE. An investor can use analysis like this to compare the operational efficiency of two similar firms. Managers can use DuPont

analysis to identify strengths or weaknesses that should be addressed. DuPont analysis breaks ROE into its constituent components to determine which of these factors are most responsible for changes in ROE. In the first step, we decompose the ROE into three basic parts:

$$ROE = \frac{EAT}{E} = \frac{EAT}{R} \cdot \frac{R}{TA} \cdot \frac{TA}{E} \qquad (2.19)$$

The net profit margin is the ratio of bottom line profits compared to total revenue or total sales. This is one of the most basic measures of profitability. The profit margin can be improved if costs for the owner were reduced or if prices were raised, which can have a large impact on ROE.

And the total asset turnover can be helpful when comparing two companies that are very similar. Because average assets include components like inventory, changes in this ratio can signal that sales are slowing down or speeding up earlier than it would show up in other financial measures. If a company's asset turnover rises, its ROE will improve.

Financial leverage, or the equity multiplier, is an indirect analysis of a company's use of debt to finance its assets. Most companies should use debt with equity to fund operations and growth. Not using any leverage could put the company at a disadvantage compared with its peers. However, using too much debt in order to increase the financial leverage ratio, therefore, the increase of ROE can create disproportionate risks.

Influence quantification

Influence quantification enables to analyze indicators whose change have caused change in the basic ratio and quantify which component ratios contributed to the change in basic ratio at most. The two most important methods for quantification of influence are methods of decomposition with surplus and logarithmic decomposition method.

For the influence quantification, we will calculate whose change have caused change in the basic ratio. And basically, there are four methods that quantification the influence: methods of gradual changes, methods of decomposition with surplus, logarithmic decomposition method, functional decomposition method, integral method. And we

will use the logarithmic decomposition method and the integral method to analysis the probability of Skoda company in the following chapter, here we will introduce the methods individually:

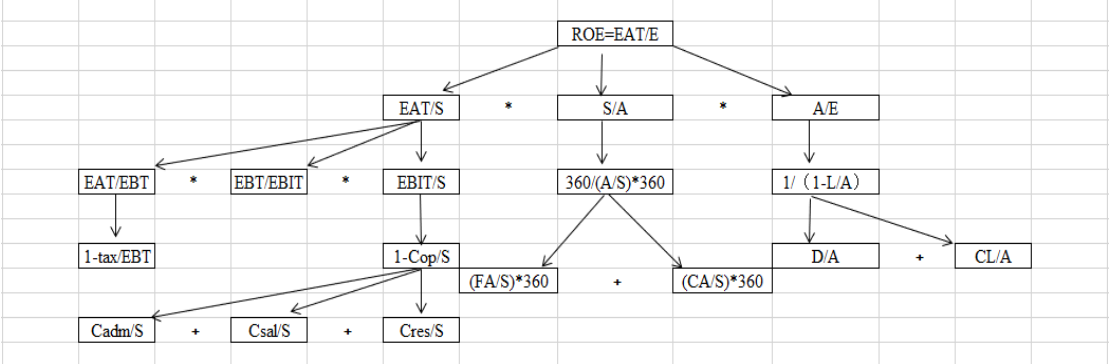
For the logarithmic decomposition method, we use the absolute change in this method, there is the advantage: we need just one formula for the impact quantification regardless of how many component ratios we have and the impact of the component ration on the change in the basic ratio is calculated as follows:

$$\Delta X_{a_i} = \frac{ln\, I_{a_i}}{ln\, I_x} \cdot \Delta X \tag{2.24}$$

Hallmark: x is the basic ratio, Δx is the absolute change in the basic ratio, I_{a_i} is the index of change in component ratio, I_x is the index of change in basic ratio, ΔX presents the absolute change in basic ratio.

The steps of full decomposition are as followed: Firstly, we decompensate the ROE into three parts: “EAT/R”; “R/A”; “TA/E”; Secondly, for “EAT/R”, we decompensate the “EAT/R” into three different parts: “EAT/EBT”; “EBT/EBIT”; “EBIT/S”, we turn the “EAT/EBT” into “1-tax/EBT”, and turn the “EBIT/S” into “1-Cop/S”, then divide the formula into “Cadm/S” “Csal/S” “Cres/S”. For “S/A”, we turn it into “360/A/S*360” and decompensate this formula into “(FA/S) *360” and “(CA/S) *360”. For “A/E”, we turn the “A/E” to “1/(1-L/A)” and divide this formula into “D/A”, “CL/A”. Full pyramidal decomposition of the return on equity is shown in table 2.4.

Table 2.4 Pyramidal decomposition of the ROE



Finally, we get nine different parts and we try to find the influence of different indicators by using the logarithmic method. And the calculation process will be shown in the table in the appendix3 Then, we can conclude that the pyramidal decomposition of the order and the positive or negative influence.

2.3.4 Sensitivity analysis

[4]Sensitivity analysis is a variation on scenario analysis that is useful in pinpointing the areas where forecasting risk is especially severe. The basic idea with a sensitivity analysis is to freeze all the variables except one and then see how sensitive our estimate of ROE is to changes in that one variable. If our ROE estimate turns out to be very sensitive to relatively small changes in the projected value of some component of project cash flow, then the forecasting risk associated with that variable is high. Sensitivity analysis is a very commonly used tool. Sensitivity analysis is useful for pointing out where forecasting errors will do the most damage, but it does not tell us what to do about possible errors.

In the thesis, there will be the one factor sensitivity analysis and three factor sensitivity analysis. A sensitivity analysis determines how different values of an independent variable affect a dependent variable under a given set of assumptions. This technique is used within specific boundaries that depend on one or more input variables.

However, As we know in the reality, the data will change if the variable changed in the balance sheet or in the income statement, therefore, for the four factor sensitivity analysis, we try to connect the calculation in the income statement and the balance sheet by using the distribution cost as variable quantity, and the change of distribution cost can cause the change of other component ratio in the decomposition of ROE, and the method we used, following the same step basic step as the one factor sensitivity analysis.

[4] David Whitehurst (2002, P354)

3 Basic Financial Characteristic of the Škoda Auto a.s. Company

In chapter 3, we will back to the financial analysis of the firm, there will be the basic introduction of the firm about its history, culture and product. Combined with the enterprise's financial characteristic, we select the financial statements of the firm from 2013 to 2017 and analyze the annual financial statement individually in order to know more details about the company's strategies. Then, using the common-size analysis which includes the horizontal and vertical analysis, finally come to a result about the degree of Skoda's development of and its market situation.

3.1 The introduction of Škoda Auto a.s.

[5] ŠOODA AUTO a.s., is a Czech company with a tradition of automotive manufacturing dating back more than a century, making ŠOODA one of the world's oldest automotive brands. The Company's principal business is the development, manufacture and sale of ŠOODA-brand automobiles, components and genuine parts and accessories and the provision of maintenance services. The sole shareholder of the parent company,

Škoda automobiles are sold in over 100 countries and in 2018, total global sales reached 1.25 million units, an increase of 4.4% from the previous year.[1] The operating profit was €1.6 billion in 2017, an increase of 34.6% over the previous year.[6][7] As of 2017, Škoda's profit margin was the second highest of all VW Group brands after Porsche.

History: [6]Ever since the automotive industry's pioneering days, the ŠOODA brand has been turning out cutting-edge technologies and inventions. Our devotion to refining people-moving technology initially found expression in bicycles, followed by motorcycles and, ultimately, our industry-leading cars. Come with us on an exciting trip down memory lane at ŠOODA, taking in the company's foundation in 1895 to the

[5] From Skoda's annual report of 2013

[6] https://www.skoda.co.uk/discover/history

present day, and explore its rich heritage, brimming with history-making cars and intriguing moments. It formerly known as Laurin and Clement (Laurin Olement), is a company founded in 1895 to make bicycles and motorcycles. In 1905, LO launched the first four-wheeled car, -voiturette a. LO was acquired by Czech industrial giant Skoda Pearson Industries in 1925 and the new company is in parallel with two brands of "Skoda" and "Laurin Olement". In the 1926, the "Laurin Olement" brand officially withdrew from the historical stage, Skoda Automobile began to "Skoda" as the only trademark of the development of the road.

Markets: As of August 2016, Škoda was being sold in 102 countries. In 2017, the top markets for Škoda by number of sales are China, Germany, Czech Republic, Great Britain, Poland, Russia, France, Turkey, Italy and Austria. In the Asia-Pacific region, Škoda is also being sold in Australia, New Zealand, Taiwan and India. Škoda is also expanding into emerging markets such as Iran, where imports are to be started from 2018 and production of vehicles by 2020. Expansion strategy also includes Singapore.

3.2 General information during 2013 to 2017

In this subchapter, we will do the analysis of each individual year in 2013 to2017, trying to find different financial status and the company’s various kinds of strategies in these five year by selecting the important financial data.

3.2.1 General information of 2013

In 2013, despite the challenging situation on automotive markets and extensive investments in the largest model offensive in the history of ŠOODA AUTO, the Group delivered a sound financial performance. ŠOODA AUTO Group sales increased year-on-year by 2.2% to CZO 268.5 billion, which is the highest figure in the Company's history. Operating profit reached CZO 13.5 billion. Net profit fell to CZO 11.8 billion.

Here are the key financial data:

Table 3.1 Consolidated balance sheet (CZO million)

	2013	2012	2013/2012
Non-current assets	89,717	83,493	7.5%
Current assets	83,867	76,493	9.6%
of which: deposits	36,505	38,131	– 4.3%
Total assets	173,584	159,986	8.5%
Equity	93,359	90,906	2.7%
Non-current liabilities	17,197	19,176	– 10.3%
Current liabilities	63,028	49,904	26.3%
Total liabilities	173,584	159,986	8.5%

The Group's balance sheet totaled CZO 173.6 billion, which – compared to the previous year's balance – corresponds to an increase of CZO 13.6 billion, or 8.5%. This result was also due to an increase in long-term assets. As of the date of the closing balance, long-term assets totaled CZO 89.7 billion, exceeding the 31 December 2012 figure by 7.5%. There was a significant growth in intangible and tangible assets, which increased by CZO 8.9 billion (+11.9%).

Another significant increase occurred in other short-term receivables, which primarily resulted from the reclassification of short-term and long-term receivables due to shorter remaining due dates. In 2013, profit after taxes increased equity by CZO 11.8 billion, while the dividend payment diverted CZO 6.6 billion. In the reporting period, the Group's short-term liabilities increased by CZO 13.1 billion, or 26.3%, which primarily resulted from the reclassification of short-term and long-term liabilities due to shorter remaining due dates. There was also a year-on year increase in trade payables of CZO 6 billion (+19.4%). In 2013, capital expenditures (excluding development costs) amounted to CZO 19.6 billion and declined by CZO 1.5 billion compared to the same period in 2012. The largest share consisted of product investment related to new models and engine ramp-up.

Table3.2 Consolidated income statement (CZO million)

	2013	2012	2013/2012
Sales revenue	268,500	262,649	2.2%
Costs of sales	228,459	221,751	3.0%
Gross profit	40,041	40,898	–2.1%
Distribution expenses	18,487	19,179	– 3.6%
Administrative expenses	7,442	6,855	8.6%
Other operating income	8,187	10,122	–19.1%
Other operating expenses	8,760	7,069	23.9%
Operating profit	13,539	17,917	–24.4%
Financial result	–111	–1,255	–91.2%
Profit before income tax	13,940	17,934	–22.3%
Income tax expense	2,108	2,580	–18.3%
Profit after income tax	11,8321	5,354	–22.9%

In the P/L statement, compared to the previous year, gross profit declined by 2.1% to CZO 40 billion. Gross margin (the ratio of gross profit to revenues) declined to 14.9% and, compared to 2012, fell by 0.7 percentage points. Group operating profit declined in the reporting period by 24.4% to CZO 13.5 billion, which resulted from higher depreciation and lower deliveries due to the challenging market environment and the gradual ramp-up of the new generation ŠOODA Octavia. The Group's financial result improved and losses were reduced to CZO 0.1 billion, particularly due to positive revaluation of derivatives. Profit before tax declined to CZO 13.9 billion (-22.3%), while there was a decrease in profit after taxes of CZO 3.5 billion (-22.9%) to CZO 11.8 billion. In 2013, there was a return on revenue before tax of 5.2%.

Table 3.3 Development of Group financing (CZO million)

	2013	2012	2013/2012
Opening balance of cash and cash equivalents	40,467	31,251	29.5%
Cash flows from operating activities	34,112	23,443	45.5%
Cash flows from investing activities	–25,896	–7,032	>100%
Cash flows from financing activities	–6,629	–7,177	–7.6%
Gross liquidity	42,627	40,467	5.3%
Balance of financial liabilities	– 6,867	– 5,577	23.1%
Net liquidity	35,760	34,890	2.5%

Group cash flows. In 2013, operating cash flow reached CZO 34.1 billion. There was a year-on-year increase in net liquidity of 2.5%, reaching CZO 35.8 billion.

3.2.2 General information of 2014

[7]The Company achieved record sales, revenues, operating profit, net cash flow and liquidity. In 2014, as a result of increasing sales and successful measures to improve efficiency, the Company further enhanced its financial performance. ŠOODA AUTO sales revenue increased year-on-year by 22.9% to CZO 299.3 billion, which is the highest result in the Company's history. Operating profit improved significantly and reached CZO 21.6 billion. Profit after income tax mounted to CZO 18.4 billion.

Table3.4 Balance sheet (CZO million)

	1.12.2014	1.12.2013	2014/2013
Non-current assets	105,139	87,923	19.6%
Current assets	71,730	64,078	11.9%
Total assets	176,869	152,001	16.4%
Equity	100,001	90,316	10.7%
Non-current liabilities	18,407	12,594	46.2%
Current liabilities	58,461	49,091	19.1%
Total liabilities	176,869	152,001	16.4%

As at 31 December 2014, the Company's balance sheet totaled CZO 176.9 billion, which, compared to the previous year's balance, corresponds to an increase of CZO 24.9 billion, or 16.4%. This result was mainly due to an increase in non-current assets.

As of the date of the closing balance, non-current assets totaled CZO 105.1 billion, exceeding the 31 December 2013 figure by 19.6%. The value of tangible and intangible assets increased by CZO 8.2 billion, which represents an increase of 9.8%. Due to the provision of long-term loans within the framework of the VW Group, growth was also reported in other long-term receivables. Current assets increased by 11.9% compared to 2013, reaching CZO 71.7 billion. The positive development in net liquidity is the most involved in this growth. The Company's capital structure– defined by the ratio of equity and liabilities to total equity – reported a slight year-on-year change. Equity increased during the year by CZO 9.7 billion to a total of CZO 100 billion.

In 2014, profit after taxes increased equity by CZO 18.4 billion, while the dividend

[7] From annual report 2014

payment decreased equity by CZO 5.7 billion. Non-current liabilities recorded an increase of 46.2% compared to the previous reporting period. The Company's current liabilities rose by CZO 9.4 billion to CZO 58.5 billion, mainly due to an increase in trade payables of CZO 6.4 billion related to higher production volumes. In 2014, capital expenditures (excluding development costs) amounted to CZO 19.2 billion, falling slightly compared to 2013. The largest share consisted of product investment related to new models and engine ramp-ups.

Table 3.5 Profit and loss account (CZO million)

	2014	2013	2014/2013
Sales revenue	299,318	243,624	22.9%
Cost of sales	254,944	209,538	21.7%
Gross profit	44,374	34,086	30.2%
Distribution expenses	13,466	13,067	3.1%
Administrative expenses	6,939	6,679	3.9%
Other operating income	5,130	6,024	–14.8%
Other operating expenses	7,501	7,827	–4.2%
Operating profit	21,598	12,537	72.3%
Financial result	– 249	413	>100%
Profit before income tax	21,349	12,950	64.9%
Income tax expense	2,928	1,564	87.2%
Profit after income tax	18,421	11,386	61.8%

Compared to the previous year, gross profit increased by 30.2% to CZO 44.4 billion. Gross margin (the ratio of gross profit to revenues) increased to 14.8% and, compared to 2013, improved by 0.8 percentage points. Company operating profit increased significantly in the reporting period by 72.3% to CZO 21.6 billion, which was the result of higher deliveries, an improved model mix and other cost optimization. The Company's financialresult amounted to a loss of CZO 249 million, which was mainly the result of accounting revaluation and settlement of financial currency instruments.

Table 3.6 Development of Company financing (CZO million)

	2014	2013	2013/2012
Opening balance of cash and cash equivalents	31,926	34,738	-8.1%
Cash flows from operating activities	45,158	28,965	55.9%
Cash flows from investing activities	–25,512	–25,148	1.4%
Cash flows from financing activities	–8,693	–6629	31.1%
Gross liquidity	42,878	31,926	34.4%
Balance of financial liabilities	– 1,426	–4055	-64.8%
Net liquidity	41,452	27,871	48.7%

Company cash flows. In 2014, operating cash flows amounted to CZO 45.2 billion. There was a year-on-year increase in net liquidity of 48.7%, reaching CZO 41.5 billion as at 31 December 2014.

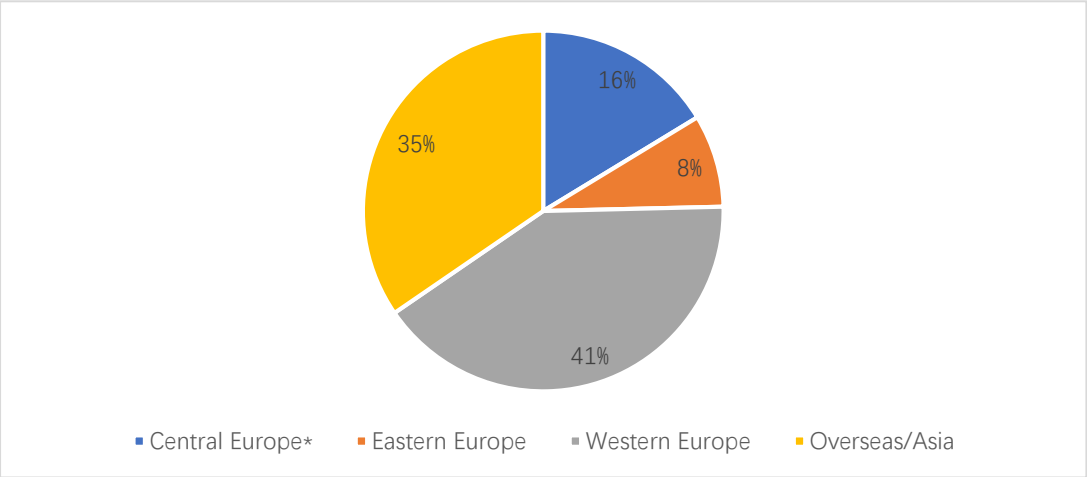
3.2.3 General information in 2015

[8]ŠOODA AUTO sales revenue increased year on year by 5.2% to CZO 314.9 billion, the highest result in the Company's history. Operating profit improved and came to CZO 35.2 billion. After tax profit amounted to CZO 30.8 billion.

In 2015, ŠOODA AUTO celebrated its 120th anniversary. This milestone year saw the brand chalk up more deliveries than ever before, achieving a record 1,055,501 ŠOODA brand vehicles being delivered worldwide. The 1.8% annual rise meant that this was the second year in a row in which the number of vehicle deliveries in a single calendar year had broken through the one-million barrier. Western and Central Europe reported growth in the overall number of vehicles delivered to customers, a result rooted in the expanding automotive market combined with thriving progress in the model offensive. This contrasted with Eastern Europe, overshadowed by the tangled political and economic situation in Russia, where deliveries fell short of the previous year. The European region saw deliveries climb by 1.2% year on year.

[8] From annual report 2015

Chart 3.1 The Distribution of deliveries to customers (vehicles) in 2015



As we can see from the chart 3.1, the western Europe remains the biggest market of total Skoda brand, while the overseas, especially China that we know from the annual report, acting as globally ŠOODA's biggest market, where ŠOODA brand succeeded in delivering a record 281,707 cars (+0.1%) in 2015. The new ŠOODA Octavia, launched on the Chinese market in mid2014, is in very high demand here. In late 2015, the Company's flagship – the ŠOODA Superb – was premièred in China.

Table 3.7 Income statement for the year ended 31 December2015 (CZO million)

	2014	2015
Sales	314,897	299,318
Cost of sales	268,184	254,944
Gross profit	46,713	44,374
Distribution expenses	13,272	13,466
Administrative expenses	7,273	6,939
Other operating income	18,779	5,130
Other operating expenses	9,793	7,501
Operating profit	35,154	21,598
Financial income	1,781	2,367
Financial expenses	2,697	2,616
Financial result	(916)	(249)
Profit before income tax	34,238	21,349
Income tax expense	3,422	2,928
Profit for the year	30,816	18,421

Company Business Performance In 2015, 1,055,501 ŠOODA brand vehicles were delivered to customers worldwide, up 1.8% year on year, making this the second year in which it had broken through the million-delivery mark. The Company's sales

climbed to 778,416 vehicles. Sales revenue rose to CZO 314.9 billion. In the reporting period, vehicle sales accounted for 84.5% of the Company's total sales revenue (2014: 84.1%). The top-selling models were the ŠOODA Octavia, ŠOODA Rapid and ŠOODA Fabia. The genuine parts and accessories business constituted 5.9% of total sales revenue (2014: 5.6%). The remaining 9.6% (2014: 10.3%) was made up of receipts from the supply of components to Volkswagen Group companies and other revenues. The cost of sales increased by 5.2% year on year to CZO 268.2 billion. The increase was largely the result of material costs (raw material costs, consumables and goods purchasing) and depreciation.

Compared to the previous year, gross profit increased by 5.3% to CZO 46.7 billion. Distribution costs were shepherded down to CZO 13.3 billion. In 2015, administrative costs were 4.8% higher year on year at CZO 7.3 billion. The Company's operating profit in the reporting period rose to CZO 35.2 billion, fueled mainly by higher sales, the mix effect, the impact of exchange rates, the sale of a subsidiary and other cost optimization. The Company's financial result was a loss of CZO 916 million. Profit before tax increased by 60.4% year on year to CZO 34.2 billion. Profit after tax climbed by CZO 12.4 billion (+67.3%) to CZO 30.8 billion. The profit before income tax-to-revenues ratio went up to 10.9%.

3.2.4 General information in 2016

In 2016, 1,126,477 ŠOODA brand vehicles were delivered to customers worldwide, up 6.7% year on year, making this the third year in a row in which it had broken through the million-delivery mark. The Company's sales climbed to 799,938 vehicles. Sales revenue rose by 10.5% year on year to CZO 348.0 billion. In the reporting period, vehicle sales accounted for 84.0% of the Company's total sales revenue (2015: 84.5%). The top-selling models were the ŠOODA OCTAVIA, the ŠOODA FABIA, and the ŠOODA SUPERB, which saw sales rocket.

[9]Table 3.8 Income statement for the year ended 31 December 2016 (CZO million)

	2015	2016
Sales	347,987	314,897
Cost of sales	295,232	268,184
Gross profit	52,755	46,713
Distribution expenses	13,503	13,272
Administrative expenses	7,843	7,273
Other operating income	6,498	18,779
Other operating expenses	7,015	9,793
Operating profit	30,892	35,154
Financial income	2,777	1,781
Financial expenses	2,820	2,697
Financial result	(43)	(916)
Profit before income tax	30,849	34,238
Income tax expense	5,686	3,422
Profit for the year	25,163	30,816

In absolute terms, the cost of sales increased by 10.1% year on year to CZO 295.2 billion. The increase was largely the result of material costs (raw material costs, consumables and goods purchasing). Compared to the previous year, gross profit increased by 12.9% to CZO 52.8 billion.

[10]Distribution costs remained at virtually the same level as in the previous year, amounting to CZO 13.5 billion (+1.7%). In 2016, administrative costs were 7.8% higher year on year at CZO 7.8 billion. The Company's operating profit for the reporting period amounted to CZO 30.9 billion. Profit before tax came to CZO 30.8 billion. Profit after tax amounted to CZO 25.2 billion. The profit before income tax-to-revenues ratio was 8.9%.

[9] From annual report 2016
[10] From annual report 2016

Table3.9 [11]Customer deliveries-largest market

		Vehicles	Change (%)
	2016	2015	2016/2015
Total ŠOODA brand	1,126,477	1,055,501	6.7
China	317,088	281,707	12.6
Germany	165,196	158,747	4.1
Czech Republic	88,016	85,005	3.5
United Oingdom	80,325	74,879	7.3
Poland	56,180	50,039	12.3
Russia	55,386	55,012	0.7
Turkey	28,893	22,233	30.0
Spain*	23,241	22,068	5.3
France	23,013	21,500	7.0
Austria	20,563	20,503	0.3
Italy	20,530	16,550	24.0
Israel	20,402	17,753	14.9
Belgium	18,925	18,001	5.1
Slovakia	18,860	18,252	3.3
Switzerland	18,579	19,012	(2.3)

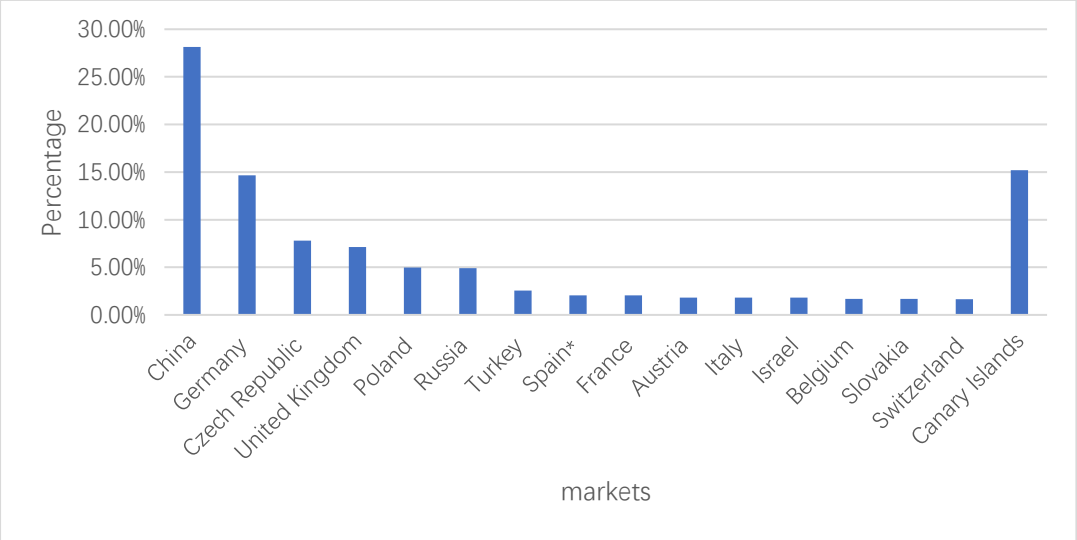
* excluding the Canary Islands

In 2016, ŠOODA AUTO celebrated 25 years of cooperation with the VOLOSWAGEN Group. This milestone year saw the ŠOODA brand chalk up more sales than ever before, with a record 1,126,477 ŠOODAs – up 6.7% year on year – delivered to customers across the world. This was the third year in a row in which the Company surpassed a million vehicle deliveries in a single calendar year.

Western and Central Europe reported growth in the overall number of vehicles delivered to customers, a result rooted in the expanding automotive market combined with thriving progress in the model offensive. In defiance of the unabating complexity of the political and economic situation in Russia, deliveries in Eastern Europe were higher than in the previous year. The European region, taken, saw deliveries climb by 5.4% year on year.

[11] https://cdn.skoda-storyboard.com/2017/04/skoda-annual-report-2016.pdf

[12]Chart 3.2 Customer deliveries-largest market



This productive trend was spearheaded by China, globally ŠOODA's biggest market, where we succeeded in delivering a record 317,088 cars (+12.6%) in 2016. The latest ŠOODA OCTAVIA was most in demand here, and the new ŠOODA SUPERB flagship unveiled towards the end of 2015 has also been a success story.

There was another strong rise in the number of ŠOODA AUTO deliveries made in Turkey, where customers took possession of a record 28,893 vehicles (+30.0%) and the Company gained its largest ever market share here. Israel is another country where ŠOODA celebrated record sales, delivering 20,402 cars (+14.9%).

3.2.5 General information in 2017

In many respects, 2017 was the most successful financial year in ŠOODA AUTO's history, yielding record sales, turnover, operating profit and operating cash flow. The Company's further improvements in financial performance in 2017 were built on its expanding sales and successful efficiency-boosting measures.

[12] From annual report 2016

Table3.10 Income statement for the year ended 31 December 2017 (CZO Million)

	2017	2016
Sales	407,400	347,987
Cost of sales	347,519	295,232
Gross profit	59,881	52,755
Distribution expenses	15,040	13,503
Administrative expenses	9,710	7,843
Other operating income	13,397	6,498
Other operating expenses	7,997	7,015
Operating profit	40,531	30,892
Financial income	3,373	2,777
Financial expenses	4,779	2,820
Net financial result	(1,406)	(43)
Profit before tax	39,125	30,849
Income tax expense	7,284	5,686
Profit for the year	31,841	25,163

In absolute terms, the cost of sales increased by 17.7% year on year to CZO 347.5 billion. Much of this increase can be attributed to material costs (the cost of raw materials, consumables and purchased goods). Compared to the previous year, gross profit increased by 13.5% to CZO 59.9 billion.

[13]Distribution costs climbed by 11.4% year on year to CZO 15.0 billion. In 2017, administrative costs were 23.8% higher year on year at CZO 9.7 billion. These administrative costs were pushed up by the purchase of IT services to digitalize the Company and its processes. The Company's CZO 40.5 billion operating profit in the reporting period was 31.2% higher than in the previous year. Profit before tax came to CZO 39.1 billion (2016: CZO 30.8 billion). Profit after tax was CZO 31.8 billion (2016: CZO 25.2 billion). The profit before income tax-to-revenues ratio was 9.6% (2016: 8.9%).

3.3 The Common-size Analysis of Skoda

In this subchapter, there will be common size analysis of Skoda's financial statement which focus on the general information of three kinds of financial statements of Skoda between 2013 to 2017. By using common-size analysis, on the one hand, the horizontal

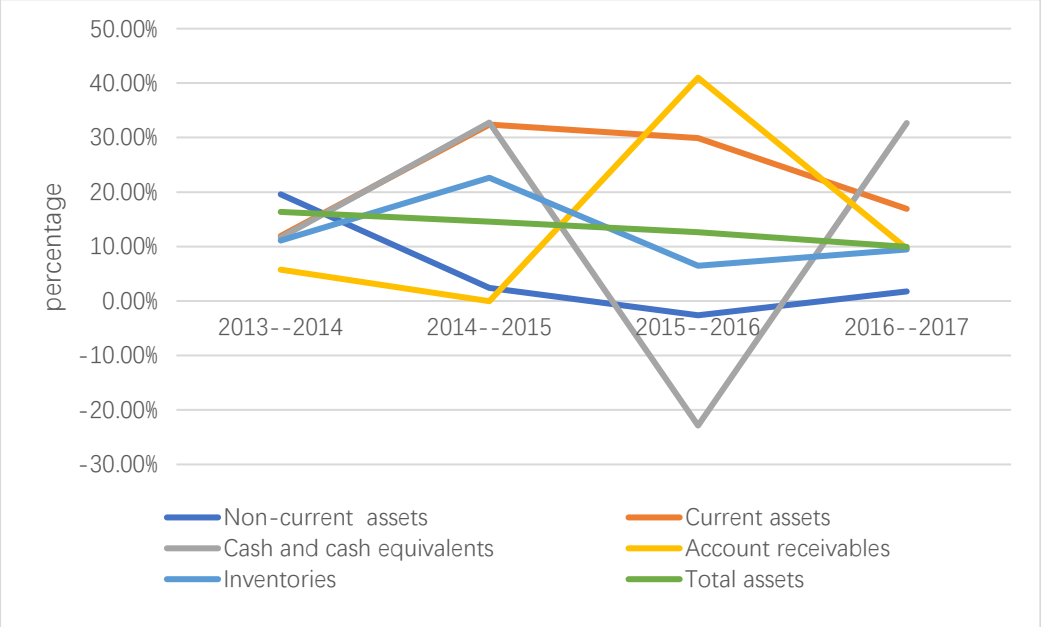
[13] From annual report 2017

analysis will help us understand the changes in three statements year by year, and on the other hand, the vertical analysis, will indicates the changes in the proportion of different subjects.

3.3.1 The horizontal analysis.

In this part, the basic data of financial statements will be analyzed by the horizontal method, which will be illustrated by the line chart. In order to have a direct look at the changes of data, the relative change will be used rather than the simple data of each year. Here is the horizontal analysis of the Skoda company in 2013 to 2017

Chart3.3 Horizontal Analysis of Balance Sheet (Assets)

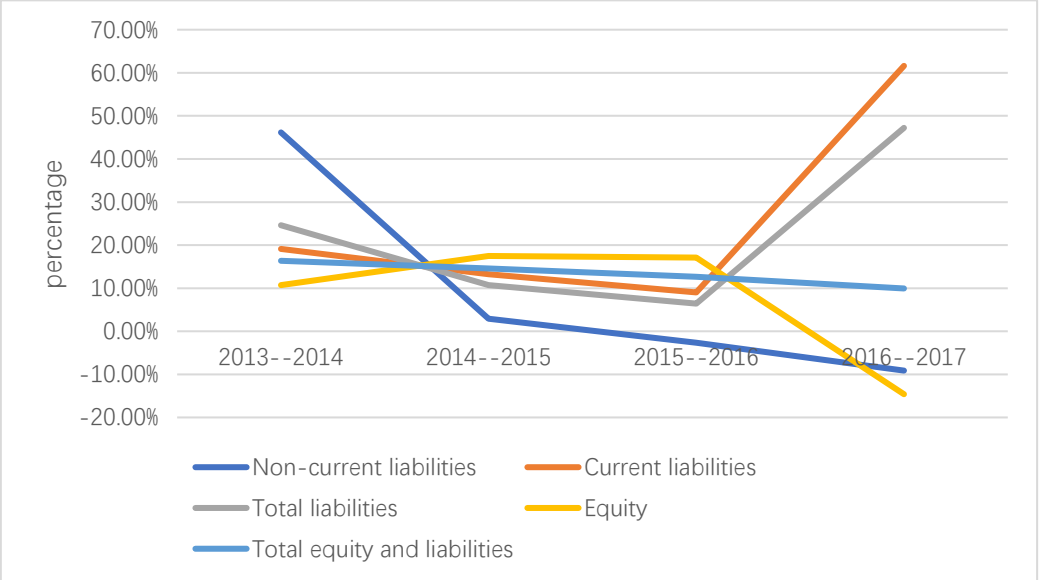


As we can see from the chart 3.3, the total asset keep increasing in 2013 to 2017, however, in order to see the data in detail, we can figure that the relative change of total assets decreased a little bit, but still higher than zero percentage, which illustrated that the asses keep increasing but the increasing speed went down.

And more detailly, we can find out that most of the components of assets such as the inventories and the account receivables are increasing in 2013 to 2017, except the cash and cash equivalent. It shows the decreasing speed of total assets caused by the decreasing of cash and cash equivalents, especially in 2015 to 2016. It shows the liquid

of assets decreased in 2015 because the cash and cash equivalents are the most liquid part of asset.

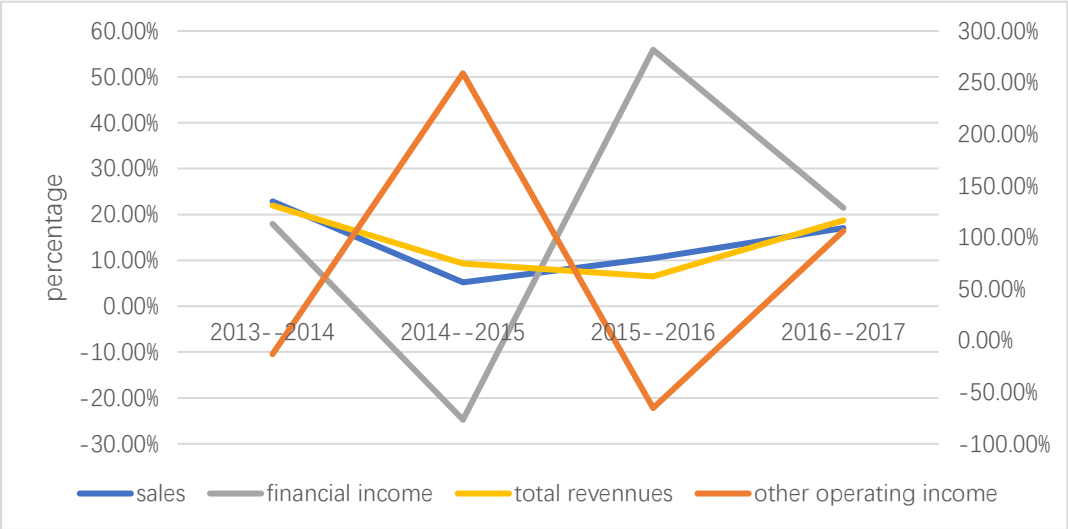
Chart3.4 Horizontal Analysis of Balance Sheet (Equity, Liabilities)



As we can see from the chart 3.4, the total liabilities increase sharply in the2016 to 2017, while the equity goes down in 2016 to 2017, and the assets keep increasing in this period as we know from the chart 3.3, showing that the company make a different financial decision in financial leverage. And the decision in financial more from the debt holders helps the company to own more financial assets.

And more detailly, we can find out that the relative change of noncurrent liabilities has deceased since 2014, while the current liabilities keep on increasing and the increase speed wen sharply higher in 2016 to 2017, indicating the company's leverage of debt turn to the current liabilities instead of the long-term debt.

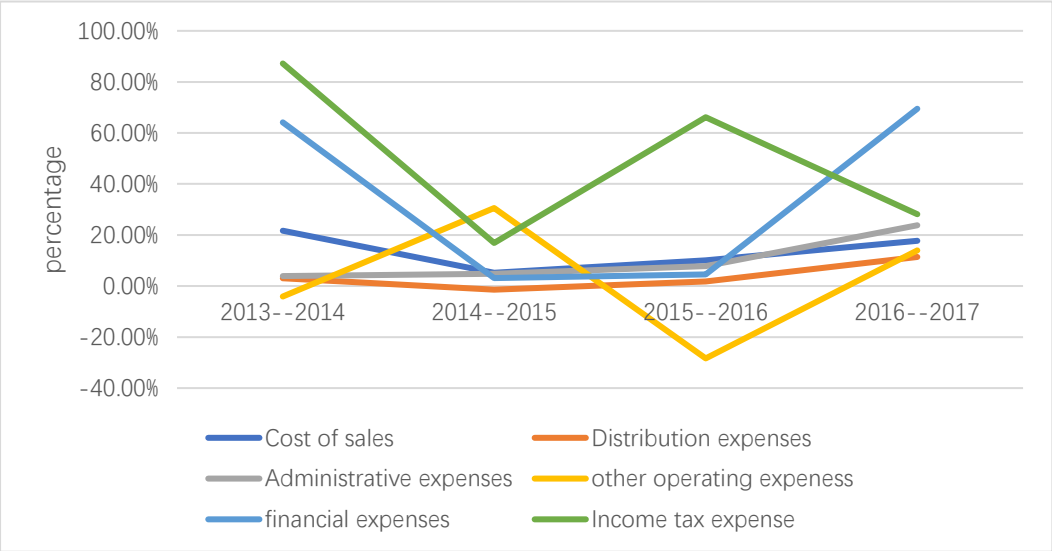
Chart3.5 Horizontal Analysis of income statement (Revenues)



We use two axes because the other operating income changes considerably, which helps us to analyze the data clearly, and it is not difficult to figure out that total earnings are increasing, while total earnings growth has declined in 2014-2016 years, By carefully observing the other details of the proceeds, we can see a sharp decline in financial income over 2014-2015 years, suggesting that at this stage, the company's main revenue comes from operating activities rather than investment banking.

To know more from the actual annual report, we use the information in the annual report as complements. As we know from the annual report 2013, in the P/L statement, compared to the previous year, gross profit declined by 2.1% to CZO 40 billion. Gross margin (the ratio of gross profit to revenues) declined to 14.9% and, compared to 2012, fell by 0.7 percentage points. Group operating profit declined in the reporting period by 24.4% to CZO 13.5 billion, which resulted from higher depreciation and lower deliveries due to the challenging market environment and the gradual ramp-up of the new generation ŠOODA Octavia. Combined with our graph, the sales, total revenues, the financial income in our chart 3.5, showing a decreasing function of growth speed compared with the 2014 to 2015.

Chart3.6 Horizontal Analysis of income statement (Expenses)



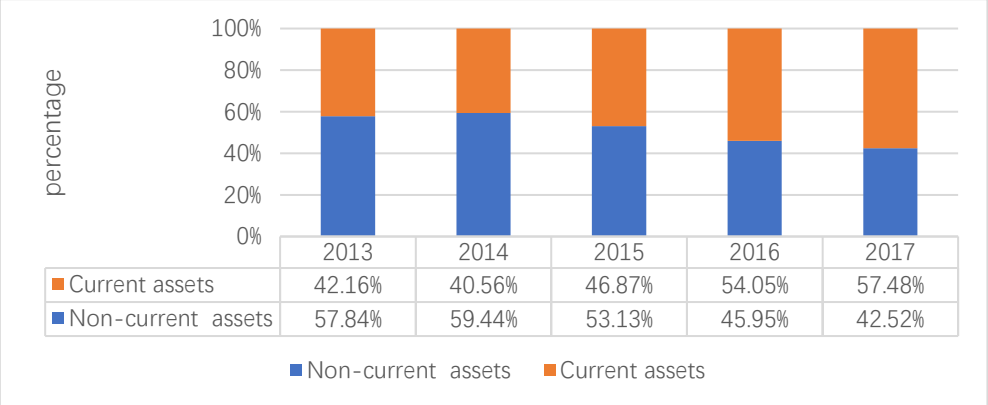
From table 3.6, it is not difficult to find that there is basically an upward trend in the search for expense, except the other operating expenses, which decreased in 2015 to 2017. the speed of growth of various kinds of expenses are different. Among them the income tax expenses decreased from 87.21% to 16.87%, and increased back to 66.16% in 2015 to 2016, the waves of the relative change show us that the speed of growth in the income tax od 2015 to 2016 is higher than 2014 to 2015, indicating the income tax increasing sharply than the previous year.

To know more from the actual annual report, we use the information in the annual report as complements. As we know from the Skoda annual report, in 2015, the top-selling models were the ŠOODA Octavia, ŠOODA Rapid and ŠOODA Fabia. The genuine parts and accessories business constituted 5.9% of total sales revenue (2014: 5.6%). The remaining 9.6% (2014: 10.3%) was made up of receipts from the supply of components to Volkswagen Group companies and other revenues. The cost of sales increased by 5.2% year on year to CZO 268.2 billion. The increase was largely the result of material costs (raw material costs, consumables and goods purchasing) and depreciation.

3.3.2 The Vertical Analysis

The second part is the vertical analysis. In this part, we will use the vertical analysis to figure the different components ratio of financial statement by percent stacking chart.

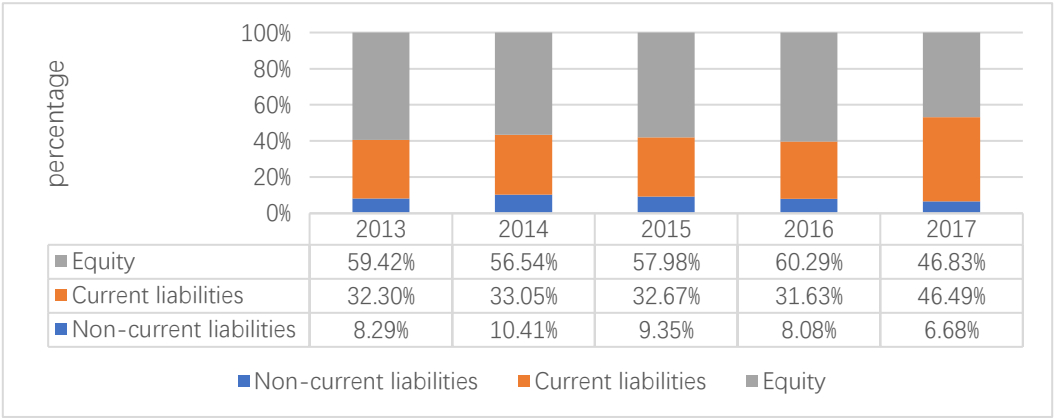
Chart 3.7 Vertical Analysis of Balance Sheet (Total Assets)



From chart 3.7, we can see the structure of total assets, including the current assets and non-current assets. In 2013 to 2014, the occupancy of current and noncurrent asst held nearly the same as the previous year, which indicating the structure of asset didn't changed a lot during these two year, and the company were in a good healthy structure of using the capital.

Ever since 2014, the noncurrent assets occupying less proportion in the total asset, which indicating the firm's long-term investing decreased while the cash, inventories and the account receivable increased, indicating a better liquid in the asset structure.

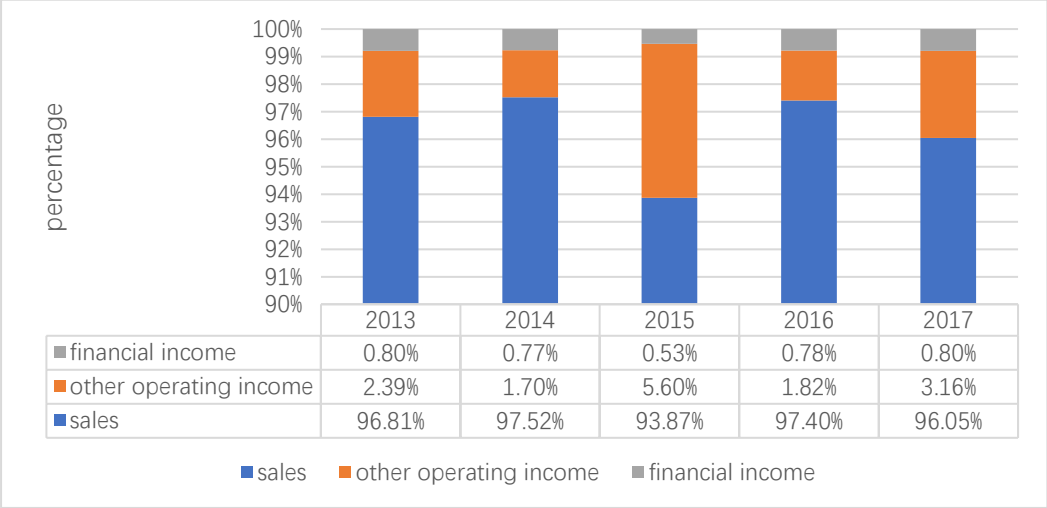
Chart 3.8 Vertical Analysis of Balance Sheet (Equity, Liabilities)



From chart 3.8, we can figure out the capital stricter of Skoda in 2013 to 2017, the source of capital which comes from the shar holder is higher than the debt holder in2013 to 2016, which in 2017, the total liability occupying 53.17% in the capital structure. In whole, the capital structure is pretty much stable.

Among the liabilities, we can find the current and noncurrent liabilities in the structure, and the current liability have higher proportion than the noncurrent liabilities. And the proportion of noncurrent liability went down from 2014, showing us that the firm hold a lower percentage of long-term debt.

Chart3.9 Vertical Analysis of Income Statement (Operating Revenue)



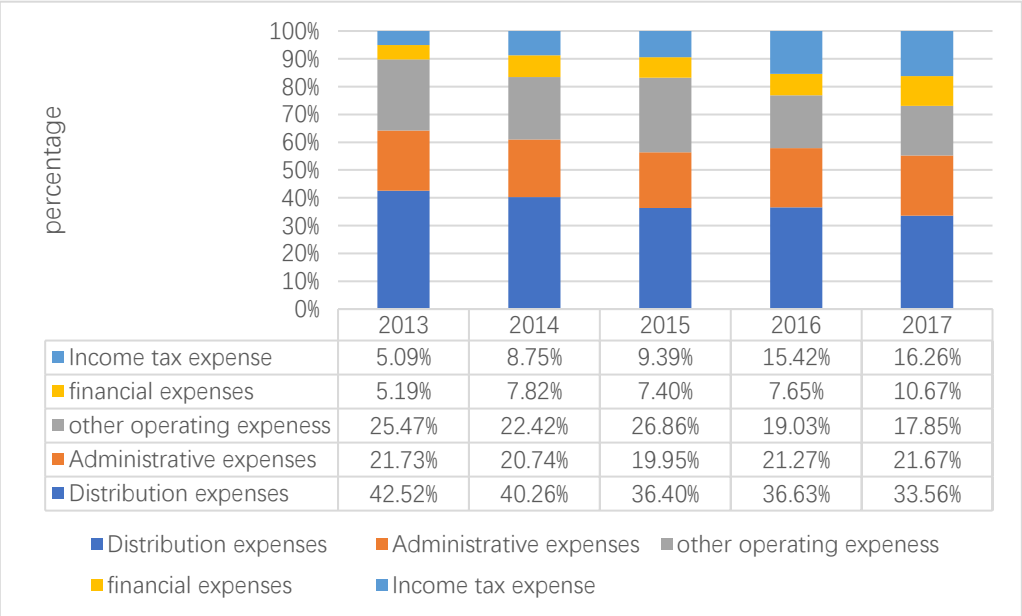
	2013	2014	2015	2016	2017
financial income	0.80%	0.77%	0.53%	0.78%	0.80%
other operating income	2.39%	1.70%	5.60%	1.82%	3.16%
sales	96.81%	97.52%	93.87%	97.40%	96.05%

As we can see from the chart, we divided the operating revenues into the sales, financial income and other operating income. Among which, the sales occupying most of the percentage. And we can get the information in the Skoda annual report: ŠOODA AUTO sales revenue increased year on year by 5.2% to CZO 314.9 billion, the highest result in the Company's history. Operating profit improved and came to CZO 35.2 billion. After tax profit amounted to CZO 30.8 billion. And in 2015, the other operating income occupied more percentage than the sales.

To know more from the actual annual report, we use the information in the annual report as complements. In 2014, profit after taxes increased equity by CZO 18.4 billion, while the dividend payment decreased equity by CZO 5.7 billion. Non-current

liabilities recorded an increase of 46.2% compared to the previous reporting period. The Company's current liabilities rose by CZO 9.4 billion to CZO 58.5 billion, mainly due to an increase in trade payables of CZO 6.4 billion related to higher production volumes. In 2014, the sales of Skoda company come to a situation, occupying the highest percentage in the five year, approaching nearly 97%percentage in the operating revenues.

Chart3.10 Vertical Analysis of Income Statement (Operating Expenses)



	2013	2014	2015	2016	2017
Income tax expense	5.09%	8.75%	9.39%	15.42%	16.26%
financial expenses	5.19%	7.82%	7.40%	7.65%	10.67%
other operating expeness	25.47%	22.42%	26.86%	19.03%	17.85%
Administrative expenses	21.73%	20.74%	19.95%	21.27%	21.67%
Distribution expenses	42.52%	40.26%	36.40%	36.63%	33.56%

As we can see from chart 3.10, the operating expense is divided into the distribution expenses, the administration expenses, the income tax expenses, financial expenses and other operating expenses. Among all these expenses, the distribution expenses occupying the most of the part in the total expenses because the car delivery in the market, especially in the global market, occupying a huge percentage, approaching 40%.

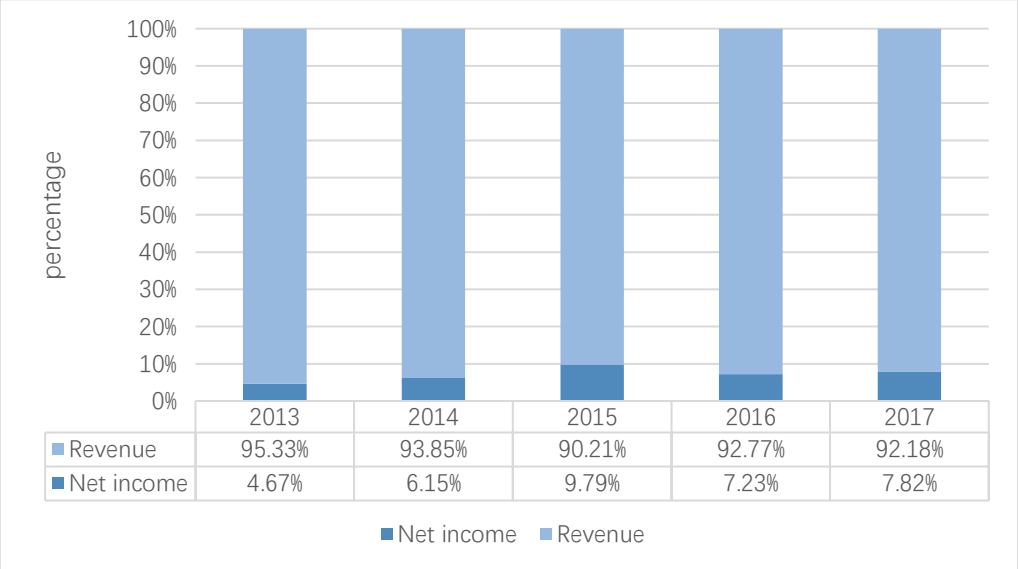
As we know from the annual report of Skoda, in 2015, This milestone year saw the brand chalk up more deliveries than ever before, achieving a record 1,055,501 ŠOODA brand vehicles being delivered worldwide. The 1.8% annual rise meant that this was the second year in a row in which the number of vehicle deliveries in a single calendar year had broken through the one-million barrier.

In 2016, 1,126,477 ŠOODA brand vehicles were delivered to customers worldwide,

up 6.7% year on year, making this the third year in a row in which it had broken through the million-delivery mark. The Company's sales climbed to 799,938 vehicles. Sales revenue rose by 10.5% year on year to CZO 348.0 billion. In the reporting period, vehicle sales accounted for 84.0% of the Company's total sales revenue (2015: 84.5%). The top-selling models were the ŠOODA OCTAVIA, the ŠOODA FABIA, and the ŠOODA SUPERB, which saw sales rocket.

The administrative expenses occupying the second big percentage in these expenses, as we know from the annual report 2017, in 2017, administrative costs were 23.8% higher year on year at CZO 9.7 billion. these administrative costs were pushed up by the purchase of IT services to digitalize the Company and its processes.

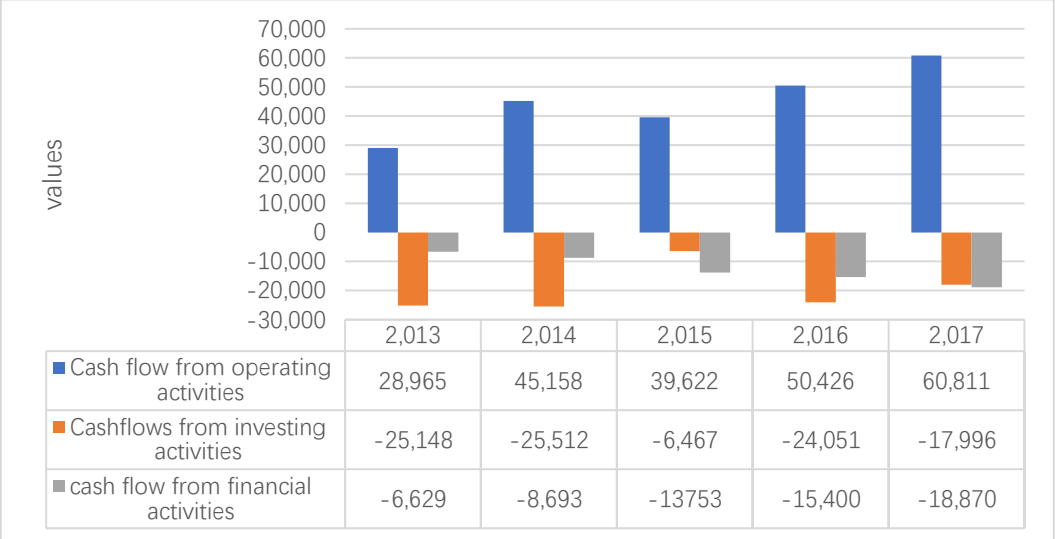
Chart3.11 Total Revenue and Total Net Income



In the chart 3.8, the percentage shows us directly the net profit percentage occupying in the total revenue. The higher it is, the more net income can the corporate get from the total revenue. What we can see from the table is the net profit occupying in the revenue goes up constantly in the year 2013 to 2015, however, the net income occupying less in the period 2015 to 2017, but the percentage change in the moving down is slowly and still higher than the first two years, indicating the net profit in the year2015 is specially moving up.

As we know from the form general in formation, ŠOODA AUTO sales revenue increased year on year by 5.2% to CZO 314.9 billion, the highest result in the Company's history. Operating profit improved and came to CZO 35.2 billion. After tax profit amounted to CZO 30.8 billion. And in order to celebrate the 120th anniversary, Profit before tax increased by 60.4% year on year to CZO 34.2 billion. Profit after tax climbed by CZO 12.4 billion to CZO 30.8 billion. The profit before income tax-to-revenues ratio went up to 10.9%.

Chart 3.12 General Information of Cash Flow Statement



	2,013	2,014	2,015	2,016	2,017
Cash flow from operating activities	28,965	45,158	39,622	50,426	60,811
Cashflows from investing activities	-25,148	-25,512	-6,467	-24,051	-17,996
cash flow from financial activities	-6,629	-8,693	-13753	-15,400	-18,870

In the operating activities, also named day-to-day activities, the inflows and outflows come from the daily operating, the outflows mainly include the wages and salaries paid to the employers who work in the producing line, and the electricity used in the producing process. And the inflows mainly come from the daily operating profit, the revenues by sailing its product. Generally, we can figure that the inflows are always higher than the outflow by comparing the cash flows from three different activities. And the situation in 2013 shows the inflows can just approximately caver the outflows cause the outflow from investing activities achieved -25148 while the cash flow from operating activates is 28965. And the situation changed since 2014, the corporate gain more from the operating activities.

The cash flow of investment activities mainly comes from purchasing and selling the

investment, the inflow of investing activities includes cash receipts from the sale of securities, property, intangible or long-term assets, while the outflows of investing activities are from the payment for the purchase of the assets. There is no cash inflow of investing activities during 2013 to 2017, which means that the company purchased a lot of non-trading securities, property, equipment, intangible or long-term assets. Especially in 2015, the corporate purchase just 6467 millions of investments, while in the other year, the firm bought a lot to make an investment.

The financing activities include obtaining or repaying the long term capital, such as equity or long-term debt. The two primary source of capital are shareholders and creditors. During the period from 2013 to 2017, there are all cash outflow from financing activities which indicates that the payment of the company to pay dividends, and the outflows goes in an increasing function, it might bring risk to the company and not good for the company's long-term operating.

4 Analysis of the Profitability of the Škoda Auto a.s. Company

In this chapter, we focus on the analysis of the profitability of the Škoda Auto a.s. Company, which is also the most important part in our thesis. We will be divided it into three part. In the first part, the financial ratios will be introduced in order: the liquid ratio, the solvency ratio, the asset turnover ratio and the probability ratio. In the second part, we will use the pyramidal decomposition to analyze the probability ratio of the ROE, ROA in the last five years, especially focusing on the ROE. In comparison, we choose Honda as a competitor company to analyze the difference in ROE by using pyramidal decomposition. Last but not least, we will use Sensitivity analysis to find the changes of the basic component's influence on the basic ratio.

4.1 Financial ratio analysis

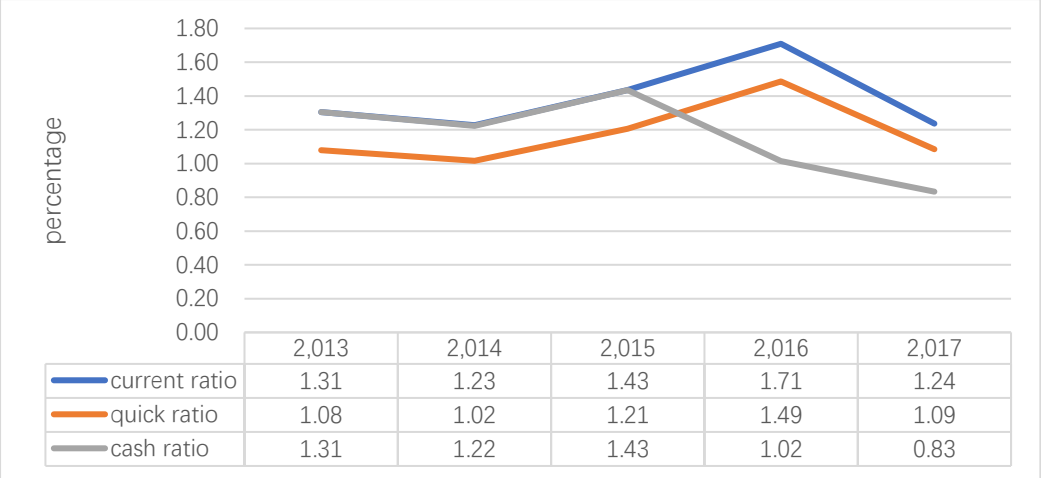
In this subchapter, we will analyze the financial ratios and by using financial ratio analysis, the changes in the profitability ratio, the liquid ratio, solvency ratios and the asset turnover ratio will be recognized.

4.1.1 Liquid Ratio analysis

Liquidity ratios measure company´s ability to meets its immediate and short-term obligations and they are an important class of financial metrics used to determine a debtor's ability to pay off current debt obligations without raising external capital.

As we mentioned in the methodology of the liquid ratio analysis, we will use the formula to analyze the data in the balance sheet, using the formula: (2.10) (2.11) (2.12)

Chart 4.1The Liquid Ratio



	2,013	2,014	2,015	2,016	2,017
current ratio	1.31	1.23	1.43	1.71	1.24
quick ratio	1.08	1.02	1.21	1.49	1.09
cash ratio	1.31	1.22	1.43	1.02	0.83

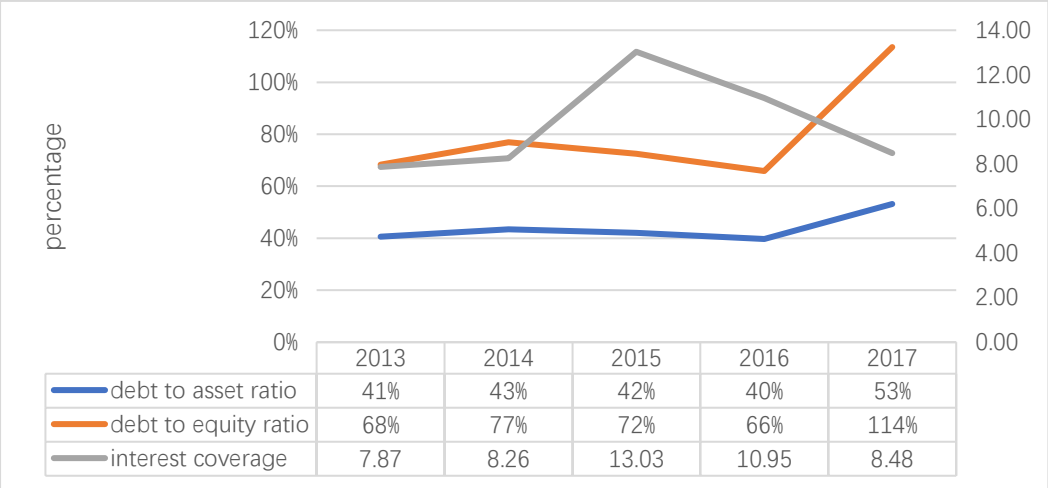
As we can see from the chart 4.1, the current ratio, which indicates the company's ability to pay for the short term debt went decreased with the other two ratio from 2013 to 2014, and increased from 2014 to 2016, while the cash ratio, which illustrates the cash equivalents and the current liabilities, went down in 2015 to 2016, which says the cash equivalent of the frim become less in this period. And during 2016 to 2017, all three kinds of current ratio went down, illustrating the firm's short term paid ability decreased general, a higher liquidity ratio shows a company is more liquid and has better coverage of outstanding debts. Alternatively, external analysis involves comparing the liquidity ratios of one company to another or an entire industry. This information is useful to compare the company's strategic positioning in relation to its competitors when establishing benchmark goals. Liquidity ratio analysis may not be as effective when looking across industries as various businesses require different financing structures.

4.1.2 Solvency Ratios

Solvency ratios measure company´s ability to meets its long-term obligations and it is a key metric used to measure an enterprise's ability to meet its debt obligations and is used often by prospective business lenders.

We will use the methodology to find the debt to equity and interest coverage ratios by using the data in the balance sheets, using formula: (2.13) (2.14).

Chart 4.2 The Solvency Ratio



	2013	2014	2015	2016	2017
debt to asset ratio	41%	43%	42%	40%	53%
debt to equity ratio	68%	77%	72%	66%	114%
interest coverage	7.87	8.26	13.03	10.95	8.48

As we can see from the chart 4.2, the debt to asset ratio and the debt to equity ratio increased since 2013 to 2014 with a little bit, and decreased from 2014 to 2016, which indicates the company got a lower solvency ratio and the greater the probability that it will default on its debt obligations. However, the solvency ratio has gone up since 2016 to 2017, the debt to asset ratio increased 13% and the debt to equity ratio increased 50%, which shows the corporate got higher ratio, and it's bad for the corporate to meet its short term as well as the long-term debt.

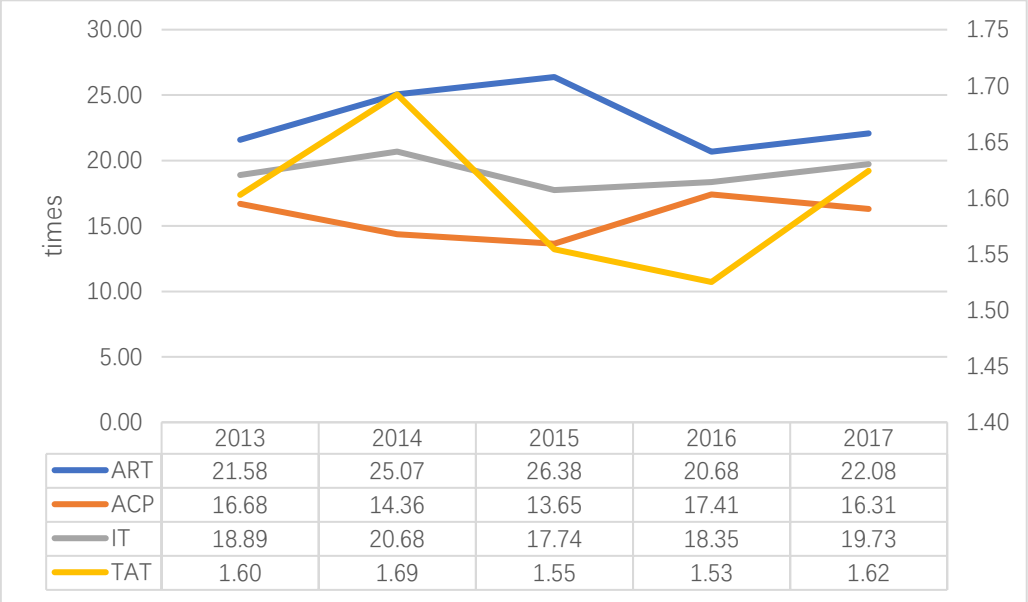
While the interest coverage has increased since 2013 to 2015, which indicates the stronger solvency, offering greater assurance that the company can service its debt from operating earnings. However, the solvency ratio went down from 2015 to2017, which shows the firm's EBIT could cover its interest payments got less, which is bad for the corporate running.

4.1.3 Turnover Ratio

Asset management ratios measure the efficiency of assets usage, Asset Management Ratios attempt to measure the firm's success in managing its assets to generate sales.

As we figured in chapter two, we will use the methodology to find the debt to equity and interest coverage ratios by using the data in the balance sheets, using formula: (2.15) (2.16) (2.17) (2.18)

Chart 4.3 Asset management ratios



	2013	2014	2015	2016	2017
ART	21.58	25.07	26.38	20.68	22.08
ACP	16.68	14.36	13.65	17.41	16.31
IT	18.89	20.68	17.74	18.35	19.73
TAT	1.60	1.69	1.55	1.53	1.62

As we can see from the chart 4.3, the Accounts Receivables Turnover went higher and higher in 2013 to 2015, which indicates the better since this implies that the firm is collecting on its accounts receivables sooner. The company can get advantage in production part because the liquidity, it's better for the company to have the account receivable back as early as possible. However, if the ratio is too high then the firm may be offering too large of a discount for early payment or may have too restrictive credit terms. In 2015 to 2016, the times went down, showing that the corporate collected the accounts in a low efficiency, while the situation got better after 2016.The same changes with the total Assets turnover, which measures the company's overall ability to generate revenues with a given level of assets.

The Days' Receivables Ratio is calculated by dividing the number of days in a year, 360, by the Receivables Turnover Ratio. The account collection period moved down and increased in 2013 to 2017, While the total assets' efficiency is stable which indicates that the management of current assets is increasing during this period.

Inventory turnover is the core operations for many entities. In the chart 3.8, the Inventory turnover is getting higher and the higher the inventory turnover ratio, the shorter the period that inventory is held, which indicates the resources tied up in

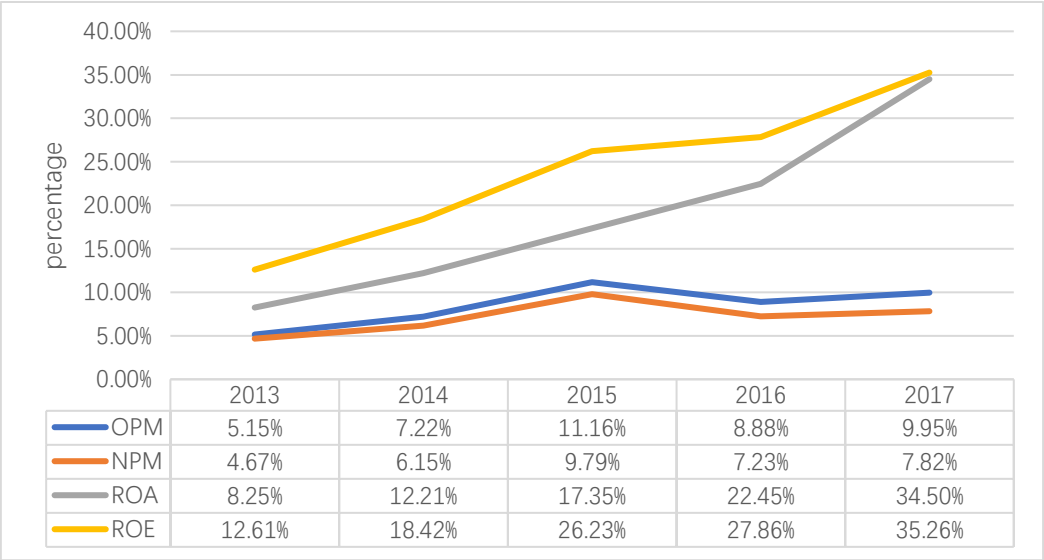
inventory and can also be used to indicate inventory management effectiveness.

4.1.4 Profitability Ratio

In this part, the attention will be paid to the analysis of probability ratio, which includes the profit margin and the return ratios. The profitability ratio analyzes the company´s ability to generate profit from invested capital, using data from a specific point in time. Profitability ratios measure the ability to generate profit from invested capital in the form of return during a period, the higher the profitability ratios, the better competitive position of the company Basic ratios.

As we figured in chapter two, we will use the methodology to find the profitability ratios by using the data in the balance sheets, using formula: (2.5) (2.6) (2.7) (2.8).

Chart 4.4 Profitability Ratio



	2013	2014	2015	2016	2017
OPM	5.15%	7.22%	11.16%	8.88%	9.95%
NPM	4.67%	6.15%	9.79%	7.23%	7.82%
ROA	8.25%	12.21%	17.35%	22.45%	34.50%
ROE	12.61%	18.42%	26.23%	27.86%	35.26%

The operating profit margins

The growth or decrease of operating profit margin are as followed：2.07% 3.95% -2.29% 1.07% -9.95%. As we can see from the chart 3.9, the operating profit margin went higher in the period 2013 to 2015, and the high operating profit margin means that the company has good cost control and that sales are increasing faster than costs, which is the optimal situation for the company. However, it decreased in the period 2015 to

2016, with a little bit, showing the firm's sales are increasing slower than costs. And the situation got better in the period 2016 to 2017.

Generally, the operating profit margin stayed a smooth wave, indicating the company have a good control on the revenue that gained faster than the cost paid such as the administration cost, the depreciation and so on.

The Net Profit Margin

Different profit margins are used to measure a company's profitability at various cost levels, the margins shrink as layers of additional costs are taken into consideration, operating margin is the percentage of sales left after covering additional operating expenses. From the annual report, we know that the increase was largely the result of material costs such as the raw material costs, consumables and goods purchasing.

Generally, the net profit margin went on the same pace with the operating profit margin, the decrees in 2015 to 2016 is resulted from the combination of lower product pricing and higher product costs. The pretax margin shows a company's profitability after further accounting for non-operating expenses.

Return on Assets

As we can see from the chart 3.9, the return on asset ratio are as followed: 8.25%, 12.21%, 17.35%, 22.45%, 34.50%; and the absolute change are: 3.96%, 5.14%, 5.10%, 12.05%. The return on assets kept increasing in the past five years, which indicates that the company's ability to generate income from a given level of assets is increasing during this period.

Return on Equity

ROE is a ratio that concerns a company's equity holders the most since it measures their ability to earn a return on their equity investments.

As we can see from the chart 3.9, the return on asset ratio are as followed: 12.61%, 18.42%, 26.23%, 27.86%, 35.26%; and the absolute change are: 5.81%, 7.81%, 1.63%,

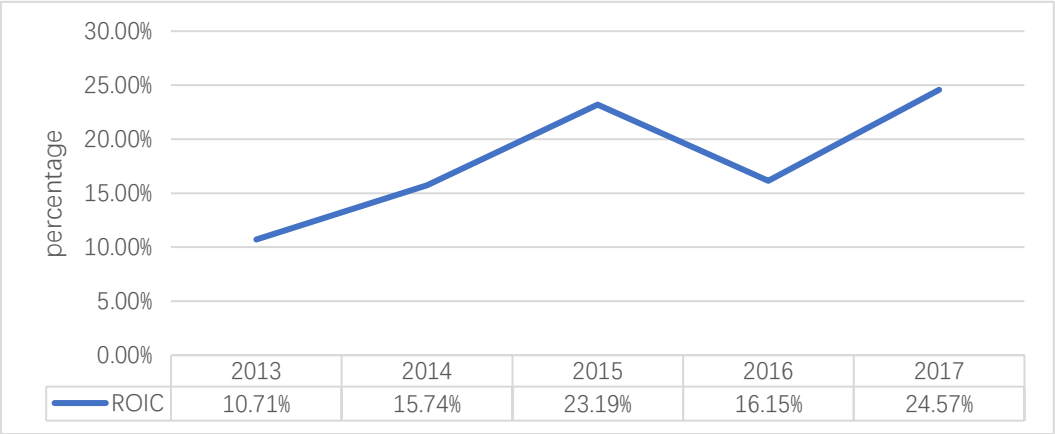
7.39%. ROE may increase dramatically without any equity addition when it can simply benefit from a higher return helped by a larger asset base. As a company increases its asset size and generates a better return with higher margins, equity holders can retain much of the return growth when additional assets are the result of debt use.

For most profitability ratios, having a higher value relative to a competitor's ratio or relative to the same ratio from a previous period indicates that the company is doing well. Ratios are most informative and useful when used to compare a subject company to other, similar companies, the company's own history, or average ratios for the company's industry.

Return on capital

Return on Invested capital refers to the proportion of money invested and/or used and related returns (the return is usually expressed as the interest earned and/or the share of profits). Used to measure the effectiveness of the use of invested funds.

Chart 4.5 Profitability Ratio (ROIC)



As we can see in chart 4.5, the return on capital increased in the 2013 to 2015, which shows us the interest earned and/or the share of profits increased. And after 2015, the return on capital decreased to 16.15%, which shows the money invested in this year didn’t get back as higher as the last year, and after 2016, the return on capital back to 24.57%, indicating that the higher ROIC values are often seen as strong evidence of strong or managed companies. However, it is important to note that high returns on

capital can also be a sign of mismanagement, such as excessive emphasis on revenue, neglect of growth opportunities, and sacrificing long-term value.

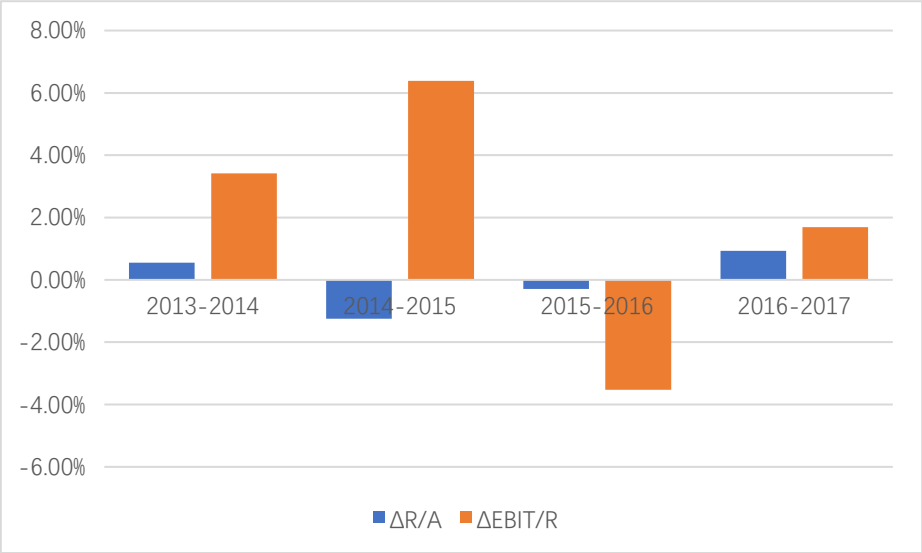
4.2 Pyramidal Decomposition of ROA

In this subchapter, we analyze the important profitability ratio ROA ratio and find the difference in the ROA ratio in years as a complement of the further decomposition of the probability ratio, In order to find out which factor has the biggest impact on it, the pyramidal decomposition method will be used to decompose the ROA. The method of logarithmic decomposition is used as the main methods of the analysis.

Table 4.1 Pyramidal Decomposition of ROA in 2013-2017

	2013-2014	2014-2015	2015-2016	2016-2017
ΔR/A	0.55%	-1.25%	-0.29%	0.93%
ΔEBIT/R	3.41%	6.38%	-3.52%	1.69%

Chart 4.6 Influence quantification of ROA



As we can see from the Table4.10 and Chart4.6, the absolute change of ROA is divided in two different ratios: “R/A”, “EBIT/R”, and the net profit margin always have a higher influence on the changes of basic ratio, and the influence are always higher except in 2015-2016, the influence get decreased, it shows us that the ROA, the probability ratio is also negative in this period.

4.3 Pyramidal Decomposition of ROE

In this core subchapter, we analyze the most important profitability ratio ROE ratio and find the difference in the ROE ratio in years and compared with the competitor company Honda Motor. In order to find out which factor has the biggest impact on it, the pyramidal decomposition method will be used to decompose the ROE. The method of logarithmic decomposition is used as the main methods of the analysis.

4.3.1 Pyramidal decomposition of Skoda in 2013-2017

In this part, in order to find the difference between the return on equity ratio in years, we will use the logarithmic decomposition method to decompose ROE, trying use the table and chart to make the conclusion more clearly.

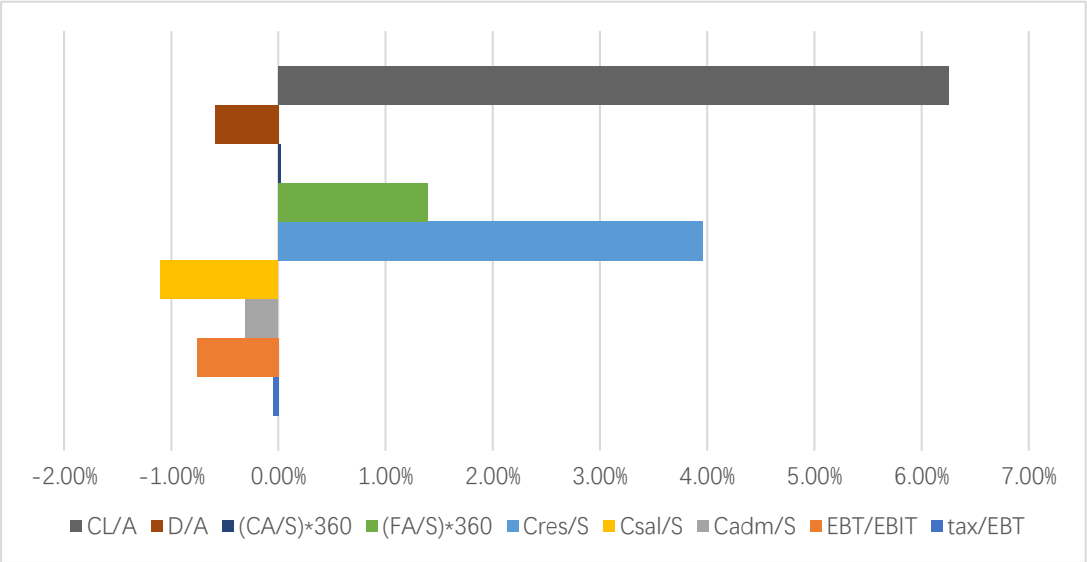
The steps of decomposition are as followed: Firstly, we decompensate the ROE into three parts: “EBT/S”; “S/A”; “A/E”; Secondly, for “EBT/S”, we decompensate the “EAT/S” into three different parts: “EAT/EBT”; “EBT/EBIT”; “EBIT/S”, we turn the “EAT/EBT” into “1-tax/EBT”, and turn the “EBIT/S” into “1-Cop/S”, then divide the formula into “Cadm/S” “Csal/S” “Cres/S”. For “S/A”, we turn it into “360/A/S*360” and decompensate this formula into “(FA/S) *360” and “(CA/S) *360”. For “A/E”, we turn the “A/E” to “1/(1-L/A)”, and divide this formula into “D/A”, “CL/A”.

Finally, we get nine different parts and we try to find the influence of different indicators by using the logarithmic method. And the calculation process will be shown in the table in the appendix. Then, we can come to a conclusion of the pyramidal decomposition of the order and the positive or negative influence, we will show it in the table. As to the influence of pyramidal decomposition, we will have a more direct look of the influence quantification by the chart.

Table 4.2 Pyramidal Decomposition of ROE in 2016-2017

Indicator	Influence	Influence (+,-)	Order
tax/EBT	-0.05%	-	8
EBT/EBIT	-0.76%	-	5
Cadm/S	-0.31%	-	7
Csal/S	-1.10%	-	4
Cres/S	3.96%	+	2
(FA/S)*360	1.39%	+	3
(CA/S)*360	0.02%	+	9
D/A	-0.59%	-	6
CL/A	6.25%	+	1
Σ	8.81%		

Chart 4.7 Influence quantification of ROE in 2016-2017



From table 4.2 and chart 4.7, we can come to a result that the ROE increased 8.81% in 2016-2017, and there are four positive component ratio's influence among nine of them, and the impact of the positive component ratio is much more higher than the negative one, therefore, the absolute change of basic ratio increased in this period.

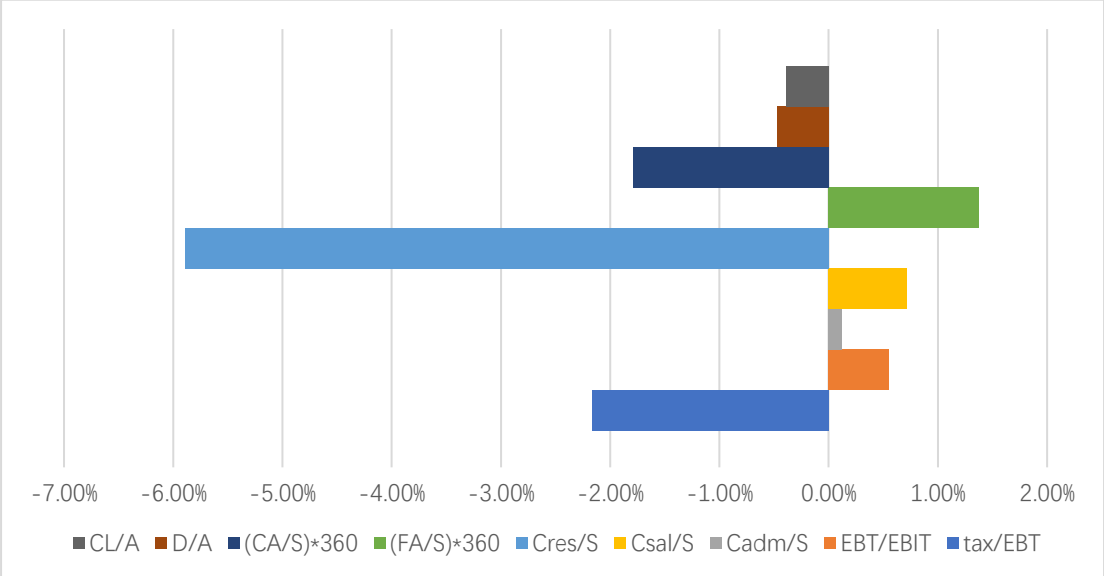
By using pyramidal decomposition, and influence quantification, we find out the "CL/A", which is the most influenced ratio in the absolute change of ROE, occupies 6.25%. the second is the "Cres/s", which is the rest of the operating cost divided by the sales, and the third is the "(FA/S) *360", which is the fixed asset divided by the sales and multiple 360. Among all the negative component ratio, the "Csal/S" has the highest negative impact.

Above all we have mentioned, we can come to a conclusion that if Skoda want to contribute on the increase of return on equity, thus increasing the probability ratio, the company can try to deal with it from the current liability and the assets, by decreasing the current liability and increasing the asset, the probability ratio will increase. Also, in order to decrease the negative impact, Skoda can also try to reduce the costs of sales in order to have a better probability ratio.

Table 4.3 Pyramidal Decomposition of ROE in 2015-2016

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-2.17%	-	2
EBT/EBIT	0.55%	+	6
Cadm/S	0.12%	+	9
Csal/S	0.72%	+	5
Cres/S	-5.89%	-	1
(FA/S) *360	1.38%	+	4
(CA/S) *360	-1.79%	-	3
D/A	-0.47%	-	7
CL/A	-0.39%	-	8
Σ	-7.94%		

Chart 4.8 Influence quantification of ROE in 2015-2016



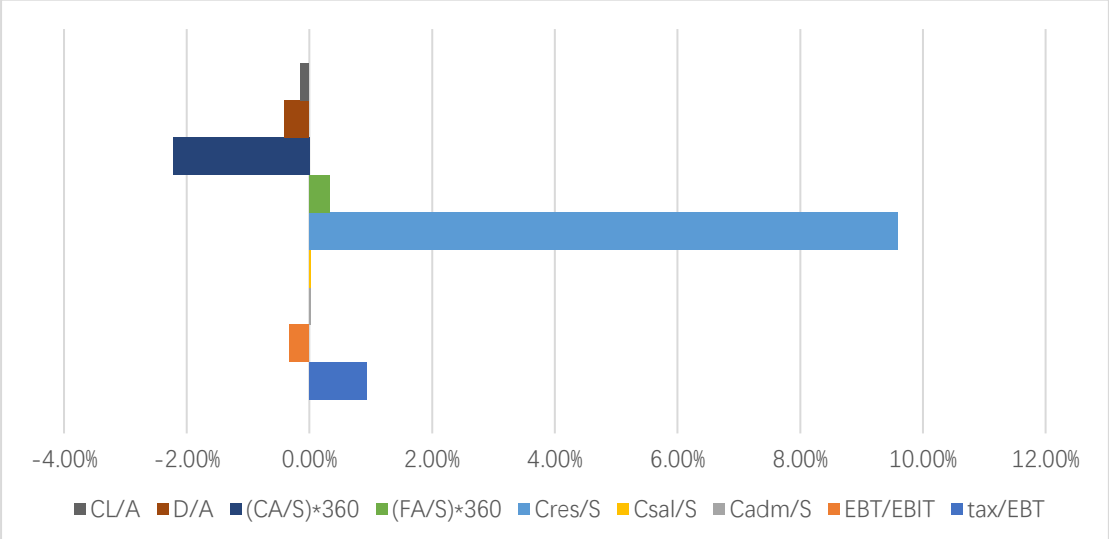
As we can see from the table 4.3 and chart4.8, the ROE decreased to -7.94% in 2015 to 2016, which is the sum of nine different component ratio's changes. and there are five component ratio acts as a negative impact on the absolute change of the basic ratio.

Among them, the “Cres/S” occupies most of the percentage, which is -5.89%, which indicate that if the Skoda company want to increase the probability ratio, it need to change the rest of the operating cost, by increasing the sales and decreasing the rest of the cost, the company can get a better situation in probability.

Table 4.4 Pyramidal Decomposition of ROE in2014-2015

Indicator	Influence	Influence (+, -)	Order
tax/EBT	0.93%	+	3
EBT/EBIT	-0.33%	-	6
Cadm/S	0.02%	+	8
Csal/S	0.02%	+	9
Cres/S	9.60%	+	1
(FA/S) *360	0.34%	+	5
(CA/S) *360	-2.22%	-	2
D/A	-0.41%	-	4
CL/A	-0.15%	-	7
Σ	7.81%		

Chart 4.9 Influence quantification of ROE in 2014-2015



From table 4.4 and chart 4.9, we can come to a result that the ROE increased 7.81% in 2014-2015, and there are three positive component ratio’s influence among nine of them, and the impact of the positive component ratio is much more higher than the negative one, therefore, the sum of absolute change of component ratio increased in this period.

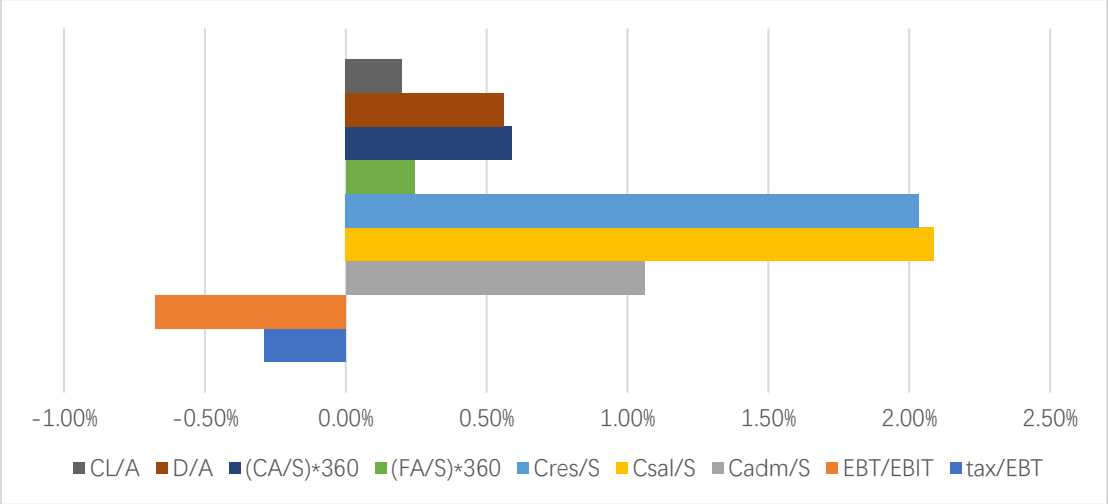
By using pyramidal decomposition, and influence quantification, we find out the "Cres/S", which is the most influenced ratio in the absolute change of ROE, occupies 9.6%. the second is the "tax/EBT", and the third is the "(FA/S) *360", which is the fixed asset divided by the sales and multiple 360. Among all the negative component ratio, the "(CA/S) *360" has the highest negative impact.

Above all we have mentioned, we can conclude that if Skoda want to contribute on the increase of return on equity, thus increasing the probability ratio, the company can try to deal with it from the rest of the cost. Also, in order to decrease the negative impact, Skoda can also try to reduce the current asset in total assets in order to have a better probability ratio.

Table 4.5 Pyramidal Decomposition of ROE in 2013-2014

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-0.29%	-	7
EBT/EBIT	-0.67%	-	4
Cadm/S	1.06%	+	3
Csal/S	2.09%	+	1
Cres/S	2.03%	+	2
(FA/S) *360	0.24%	+	8
(CA/S) *360	0.59%	+	5
D/A	0.56%	+	6
CL/A	0.20%	+	9
Σ	5.81%		

Chart 4.10 Influence quantification of ROE in 2013-2014



From table 4.5 and chart 4.10, we can come to a result that the ROE increased 5.81% in 2013-2014, and there are only two negative component ratio's influence among nine of them, and the impact of the positive component ratio is much more higher than the negative one, therefore, the absolute change of basic ratio increased in this period.

By using pyramidal decomposition, and influence quantification, we find out the "Csal/S", which is the most influenced ratio in the absolute change of ROE, occupies 2.09%. the second is the "Cres/s", which is the rest of the operating cost divided by the sales, and the third is the "Cadm/S", which is the administrative cost divided by the sales. Among all the negative component ratio, the "EBT/EBIT" has the highest negative impact.

Above all we have mentioned, we can come to a conclusion that if Skoda want to contribute on the increase of return on equity, thus increasing the probability ratio, the company can try to deal with it from the cost of sales. Also, in order to decrease the negative impact, Skoda can also try to reduce the interest in order to have a better probability ratio.

4.3.2 Pyramidal decomposition of Skoda and Honda

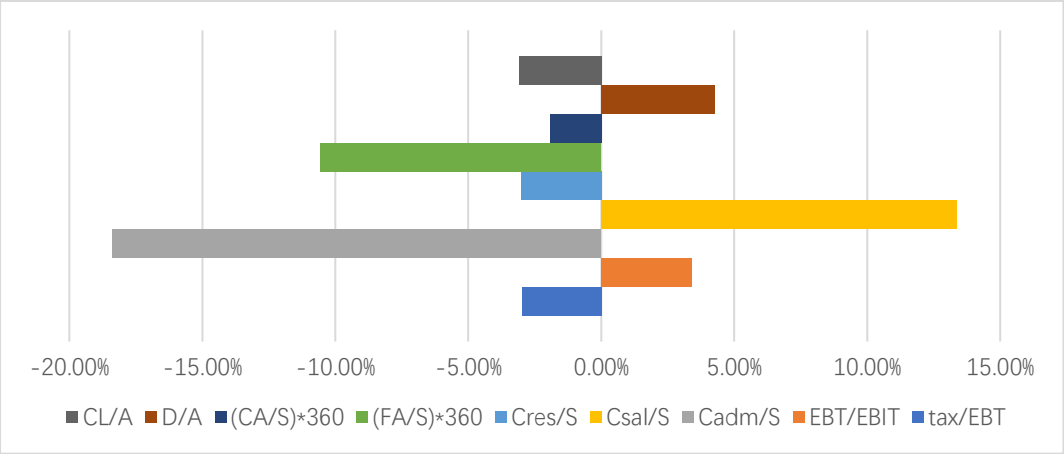
In order to have a direct look at the completive ability of Skoda's probability ratio ROE, we choose another motor producing company to make a comparison, thus, in this part, we use the data of Skoda and Honda to make a comparison decomposition.

Firstly, pyramidal decomposition: we still use the method mentioned in the last chapter; however, the data we use the comparison decomposition is the data come from two different companies and the in order to find out the difference in the absolute changes of ROE, we use the influence quantification and trying to find which component ratio has the most important influence on the changes of the basic ratio.

Table 4.6 Pyramidal Decomposition of ROE of Skoda and Honda in 2017

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-2.97%	-	8
EBT/EBIT	3.42%	+	6
Cadm/S	-18.37%	-	1
Csal/S	13.38%	+	2
Cres/S	-3.01%	-	7
(FA/S) *360	-10.56%	-	3
(CA/S) *360	-1.93%	-	9
D/A	4.28%	+	4
CL/A	-3.09%	-	5
Σ	-18.85%		

Chart 4.11 Influence quantification of ROE in 2017



From table 4.6 and chart 4.11, we can come to a result that the sum of all component ratio's influence is -18.85% , and there are only three positive component ratio's influence among nine of them, and the impact of the negative component ratio is much more higher than the positive one, therefore, the absolute change of basic ratio decreased in this period.

By using pyramidal decomposition, and influence quantification, we find out the "Cadm/S", which is the administrative cost divided by the sales, is the most influenced ratio in the absolute change of ROE, occupies -18.37%. the second is the "Csal/S", which is the cost of sales divided by the sales, and the third is the "(FA/S) *360". occupies -10.56%.

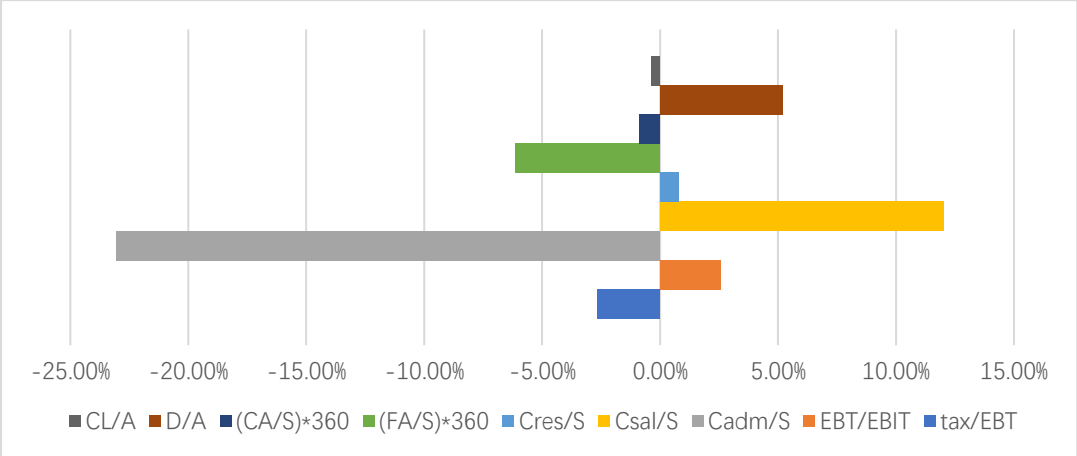
Above all we have mentioned, we can come to a result that Skoda has a much higher

ROE compared with Honda, and by pyramidal decomposition, we find that the administrative cost acts an important role in the contribution to the higher probability ratio. Therefore, Skoda held a better market situation od probability ratio compared with Honda

Table 4.7 Pyramidal Decomposition of ROE of Skoda and Honda.

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-2.64%	-	5
EBT/EBIT	2.55%	+	6
Cadm/S	-23.06%	-	1
Csal/S	12.02%	-	2
Cres/S	0.77%	+	8
(FA/S) *360	-6.13%	-	3
(CA/S) *360	-0.86%	-	7
D/A	5.21%	+	4
CL/A	-0.36%	-	9
Σ	-12.51%		

Chart 4.12 Influence quantification of ROE in 2016



From table 4.7 and chart 4.12, we can come to a result that the sum of all component ratio's influence is -12.51% , and there are four positive component ratio's influence among nine of them, and the impact of the negative component ratio is much more higher than the positive one, therefore, the absolute change of basic ratio decreased in this period.

By using pyramidal decomposition, and influence quantification, we find out the

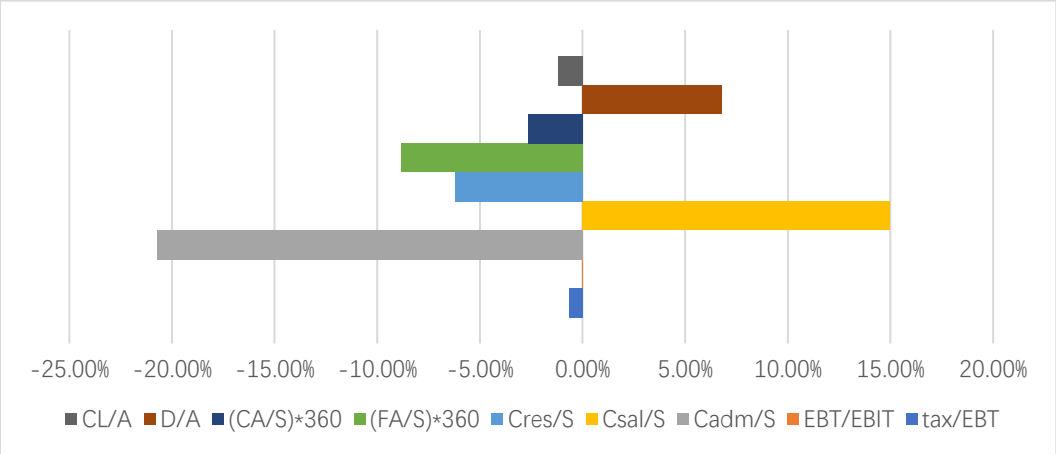
“Cadm/S”, which is the administrative cost divided by the sales, is the most influenced ratio in the absolute change of ROE, occupies –23.06%. the second is the “Csal/S”, which is the cost of sales divided by the sales, and the third is the “(FA/S) *360”. occupies -6.13%.

Above all we have mentioned, we can come to a result that Skoda has a much higher ROE compared with Honda, and by pyramidal decomposition, we find that the administrative cost acts an important role in the contribution to the higher probability ratio.

Table 4.8 Pyramidal Decomposition of ROE of Skoda and Honda.

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-0.68%	-	6
EBT/EBIT	-0.02%	-	9
Cadm/S	-20.72%	-	1
Csal/S	14.96%	+	2
Cres/S	-6.23%	-	5
(FA/S) *360	-8.84%	-	3
(CA/S) *360	-2.66%	-	7
D/A	6.77%	+	4
CL/A	-1.21%	-	8
Σ	-18.63%		

Chart 4.13 Influence quantification of ROE in 2015



From table 4.8and chart 4.13, we can come to a result that the sum of all component ratio’s influence is -18.63% , and there are only two positive component ratio’s

influence among nine of them, and the impact of the negative component ratio is much more higher than the positive one, therefore, the absolute change of basic ratio decreased in this period.

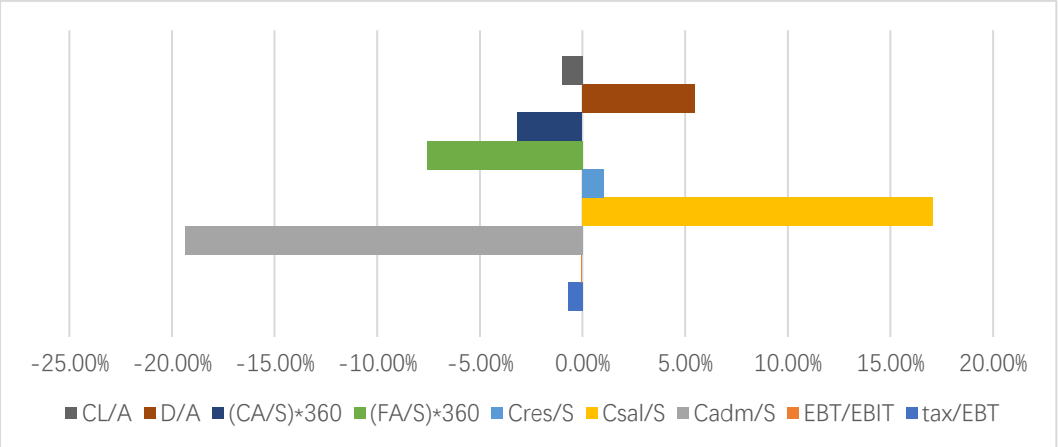
By using pyramidal decomposition, and influence quantification, we find out the "Cadm/S", which is the administrative cost divided by the sales, is the most influenced ratio in the absolute change of ROE, occupies –23.06%. the second is the "Csal/S", which is the cost of sales divided by the sales, and the third is the "(FA/S) *360". occupies -6.13%.

Above all we have mentioned, we can come to a result that Skoda has a much higher ROE compared with Honda, and by pyramidal decomposition, we find that the administrative cost acts an important role in the contribution to the higher probability.

Table 4.9 Pyramidal Decomposition of ROE of Skoda and Honda.

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-0.69%	-	5
EBT/EBIT	-0.06%	-	9
Cadm/S	-19.36%	-	1
Csal/S	17.08%	+	2
Cres/S	1.02%	+	7
(FA/S) *360	-7.59%	-	3
(CA/S) *360	-3.17%	-	6
D/A	5.49%	+	4
CL/A	-0.99%	-	8
Σ	-8.27%		

Chart 4.14 Influence quantification of ROE in 2014



From table 4.9 and chart 4.14, we can come to a result that the sum of all component ratio's influence is -8.27% , and there are only two positive component ratio's influence among nine of them, and the impact of the negative component ratio is much more higher than the positive one, therefore, the absolute change of basic ratio decreased in this period.

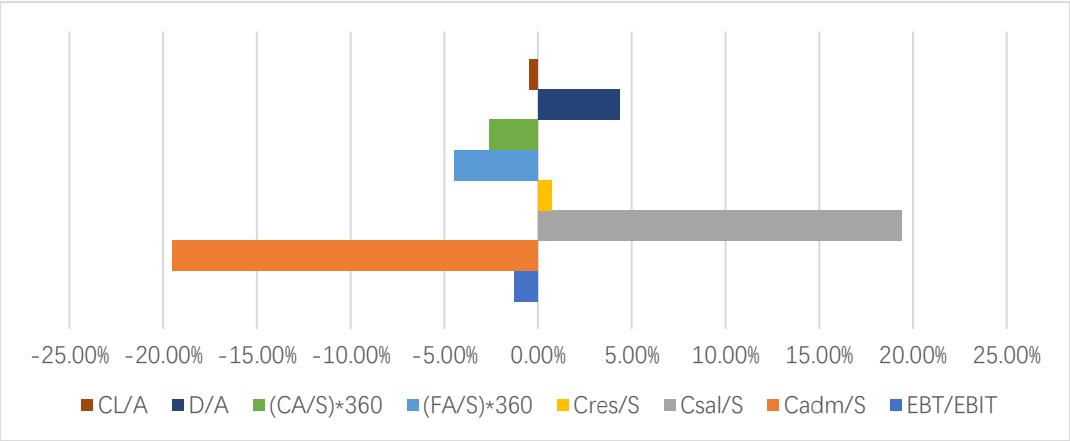
By using pyramidal decomposition, and influence quantification, we find out the "Cadm/S", which is the administrative cost divided by the sales, is the most influenced ratio in the absolute change of ROE, occupies -19.36%. the second is the "Csal/S", which is the cost of sales divided by the sales, and the third is the "(FA/S) *360". occupies -7.59%.

Above all we have mentioned, we can come to a result that Skoda has a much higher ROE compared with Honda, and by pyramidal decomposition, we find that the administrative cost acts an important role in the contribution to the higher probability.

Table 4.10 Pyramidal Decomposition of ROE of Skoda and Honda.

Indicator	Influence	Influence (+, -)	Order
tax/EBT	-2.90%	-	5
EBT/EBIT	-1.25%	-	7
Cadm/S	-19.49%	-	1
Csal/S	19.39%	+	2
Cres/S	0.72%	+	8
(FA/S) *360	-4.47%	-	3
(CA/S) *360	-2.57%	-	6
D/A	4.35%	+	4
CL/A	-0.43%	-	9
Σ	-6.65%		

Chart 4.15 Influence quantification of ROE in 2013



From table 4.8 and chart 4.13, we can come to a result that the sum of all component ratio's influence is -6.65% , and there are only two positive component ratio's influence among nine of them, and the impact of the negative component ratio is much more higher than the positive one, therefore, the absolute change of basic ratio decreased in this period.

By using pyramidal decomposition, and influence quantification, we find out the "Cadm/S", which is the administrative cost divided by the sales, is the most influenced ratio in the absolute change of ROE, occupies -19.49%. the second is the "Csal/S", which is the cost of sales divided by the sales, and the third is the "(FA/S) *360". occupies -4.47%.

While in this year, although the probability ratio still higher than the Honda, buy by using the influence decomposition, we find the influence of the "Csal/S" increased, it illustrated the Honda Motor tried to change the cost structure, therefore, the cost of administration also reduce the influence compared to the previous year.

4.4 One-factor sensitivity analysis of ROA

In this part, we will use the single Sensitivity analysis to calculate the changes of ROA, in response of the changes of each component ratios.

A sensitivity analysis determines how different values of an independent variable affect a dependent variable under a given set of assumptions. This technique is used

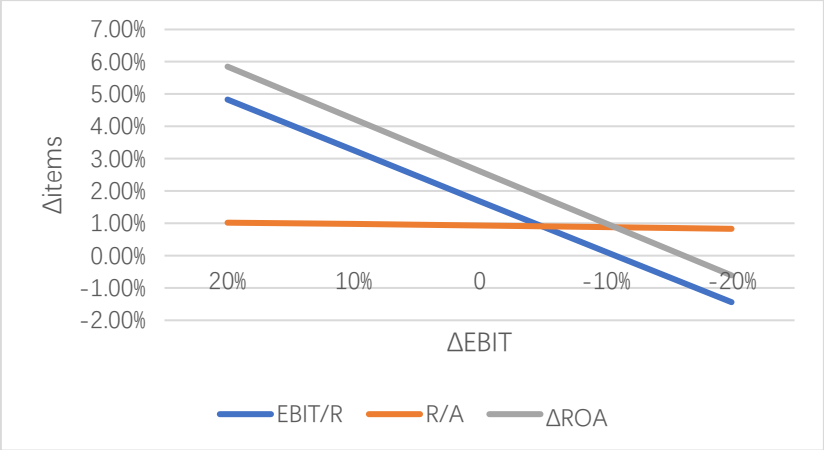
within specific boundaries that depend on one or more input variables.

In our case, we divide the ROA ratio into “R/A” multiple the “EBIT/R”, therefore, we have three different component ratios, which are: the EBIT, the earning before interest and tax; R, the revenues; A, the assets. Suppose that the other indicators will not change if we change EBIT, although it will be a little difference in the real case.

Table4.11 Sensitivity analysis of ROA (EBIT changed)

EBIT change	value	EBIT/R	R/A	ROA change
20%	48637	4.83%	1.02%	5.85%
10%	44584	3.26%	0.98%	4.23%
0	30892	1.69%	0.93%	2.62%
-10%	36478	0.12%	0.88%	1.00%
-20%	32425	-1.44%	0.83%	-0.61%

Chart 4.16 Sensitivity analysis of ROA (EBIT changed)



Firstly, we put the input data, EBIT, and calculate the changes of it if we add 10%, 20%, or reduce 10%, 20%. Secondly, we calculate the difference in the ratios if we change the EBIT, then, we calculate the changes in the influence of component ratio to the basic ratio using the logarithmic decomposition method. Finally, we calculate the sum of component ratio’s influence. And here we use the data from 2017.

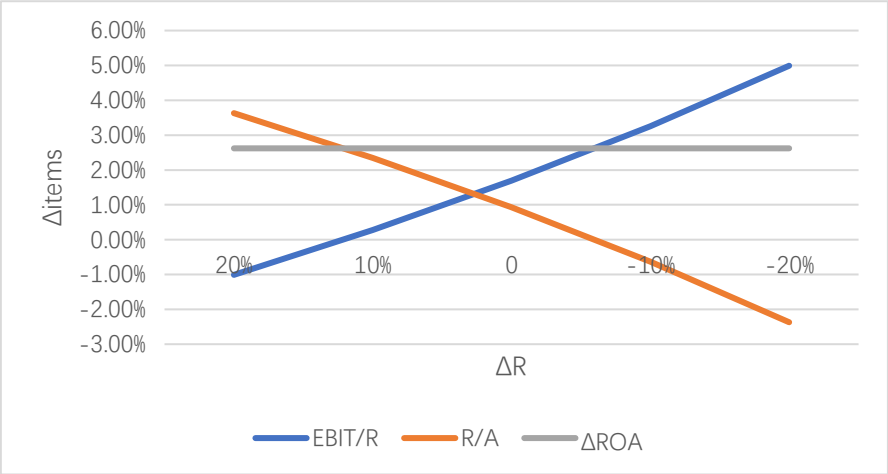
From table 4.11 and chart 4.16, we can figure out that the ROA changes in the same direction if we change the EBIT, And the “R/A”,“EBIT/R” changed in the same direction with the change of ROA, and among two different component ratio, the

changes in “EBIT/R” is higher than the changes in “R/A”.

Table4.12 Sensitivity analysis of ROA (R changed)

R change	value	EBIT/R	R/A	ROA change
20%	488880	-1.01%	3.63%	2.62%
10%	448140	0.28%	2.34%	2.62%
0	407400	1.69%	0.93%	2.62%
-10%	366660	3.25%	-0.63%	2.62%
-20%	325920	4.99%	-2.37%	2.62%

Chart 4.17 Sensitivity analysis of ROA (R changed)

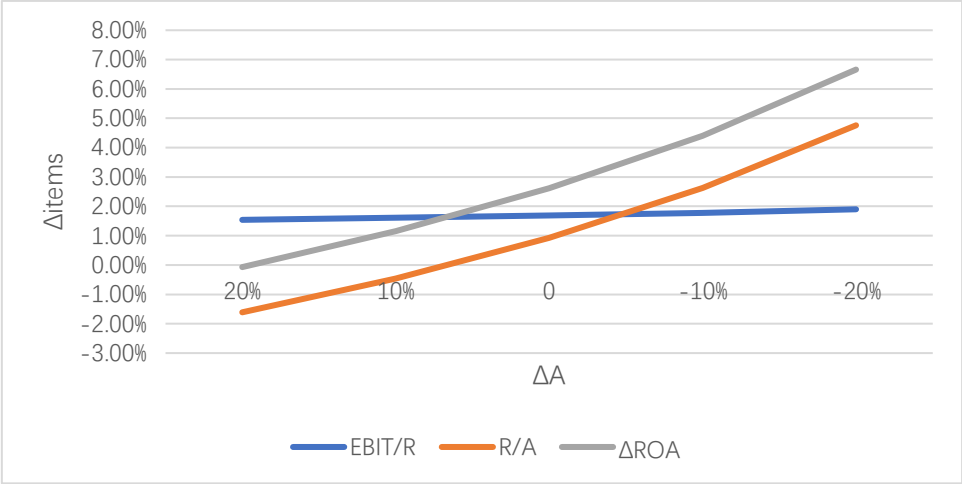


From table 4.12 and chart 4.17, we can figure out that the ROA doesn’t change if we change the R, while the changes of two component ratio are opposite, we can figure out that the “R/A” change in the same direction with the change of R, but the “EBIT/R” change in the opposite direction with the change of R, the difference in the changes make the ROA non-response to the changes of R

Table4.13 Sensitivity analysis of ROA (A changed)

A change	value	EBIT/R	R/A	ROA change
20%	301031	1.54%	-1.61%	-0.07%
10%	275945	1.61%	-0.46%	1.15%
0	250859	1.69%	0.93%	2.62%
-10%	225773	1.78%	2.63%	4.41%
-20%	200687	1.90%	4.76%	6.66%

Chart 4.18 Sensitivity analysis of ROA (A changed)



From table 4.13 and chart 4.18, we can figure out that the ROA changed in the opposite function with the change of assets, if the asset increased 10%, which means the assets increased to 275945, the ROA will decreased to 1.15%, and the changes of ROA can be decompose into two different ratios: the changes in the "EBIT/R" is1.61%, which move on the same direction with ROA, and the "R/A", which is -0.46%, also move in the same direction with ROA, it show us that the increase in the asset, will reduce the ROA.

4.5 Four factors sensitivity analysis of ROE

In this part, we will use the single as well as the multi sensitivity analysis to calculate the changes of ROE, in response of the changes of each component ratios.

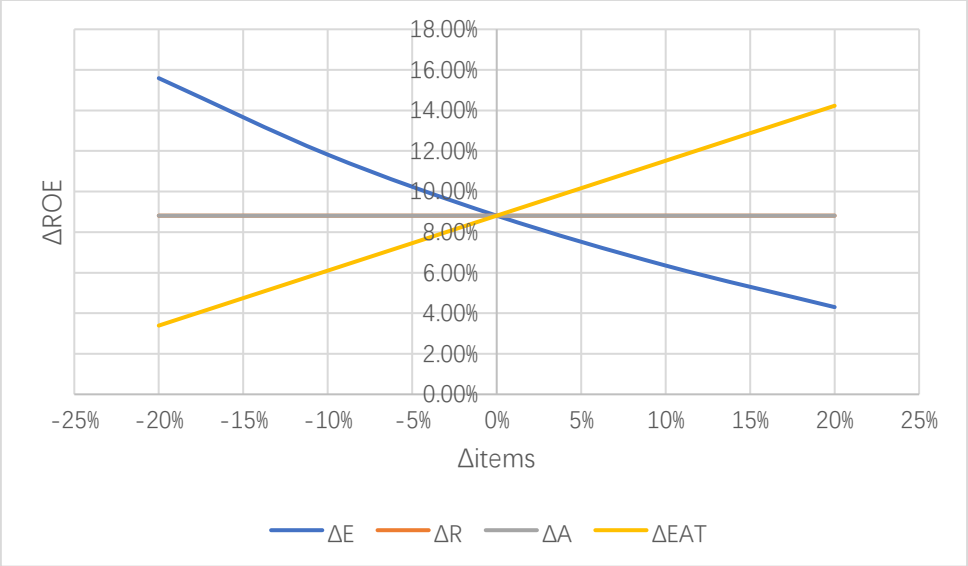
4.5.1 Sensitivity analysis of ROE

In our case, we divide the ROE ratio into "EAT/R" * "R/A" * "A/E", therefore, we have four different component ratios, which are: The E, R, A, EAT. Suppose that the other indicators will not change if we change EBIT, although it will be a little difference in the real case.

Table 4.14 Single sensitivity analysis of ROE

change	ΔE	ΔROE	ΔR	ΔROE	ΔA	ΔROE	ΔEAT	ΔROE
20%	23496.8	4.30%	81480	8.81%	50171.8	8.81%	6368.2	14.23%
10%	11748.4	6.35%	40740	8.81%	25085.9	8.81%	3184.1	11.52%
0	0	8.81%	0	8.81%	0	8.81%	0	8.81%
-10%	-11748.4	11.82%	-40740	8.81%	-25085.9	8.81%	-3184.1	6.10%
-20%	-23496.8	15.59%	-81480	8.81%	-50171.8	8.81%	-6368.2	3.39%

Chart 4.19 Single sensitivity analysis of ROE



We use the same method as the previous part, and as we can see from the table 4.14 and chart 4.19, the changes of the component values result to the changes in the ROE are totally different. For ΔE, the change of equity, cause the changes in the return after tax with a big percentage in the changes of ROE, varying from 4.3% to 15.59, indicating that if the Skoda want to increase the probability ratio ROE, there should try to begin with the changes of equity.

For revenues and the asset, we can see in the chart, there are nearly no changes in the percentage of ROE, because here we suppose the change of the variable will have no influence with the changes of other ratio, hence we get the result of no influence of the probability ratio. There will be the small change in the revenues and asserts.

For the earing after tax, as awe can see from the chart, the influence of earning after tax is higher than the changes of the equity, and it changes in the opposite direction with the ROE, it shows that if Skoda want to increase the probability ratio, it should

increase the earing after tax.

4.5.2 Sensitivity analysis of ROE on distribution cost

As we know in the reality, the data will change if the variable changed in the balance sheet or in the income statement, therefore, for the multiple sensitivity analysis, we try to connect the calculation in the income statement and the balance sheet by using the distribution cost as variable quantity, and the change of distribution cost can cause the change of other component ratio in the decomposition of ROE, and the method we use here, following the same step basic step of the single sensitivity analysis, however, we try to build a link between these data firstly.

Table 4.14 Sensitivity analysis of ROE

Cdis changes	values	ROE after change	changes of ROE
15%	17,296	25.68%	-1.43%
10%	16,544	26.16%	-0.95%
5%	15,792	26.63%	-0.47%
1%	15,190	27.01%	-0.09%
0%	15,040	27.10%	0.00%
-1%	14,890	27.20%	0.09%
-5%	14,288	27.57%	0.46%
-10%	13,536	28.02%	0.92%
-15%	12,784	28.48%	1.37%

In table 4.14, we change the distribution cost in different percentage, and firstly calculate the values of each one, and calculate the ROE after the change, and we can find the different data if we have already a link in the calculation.

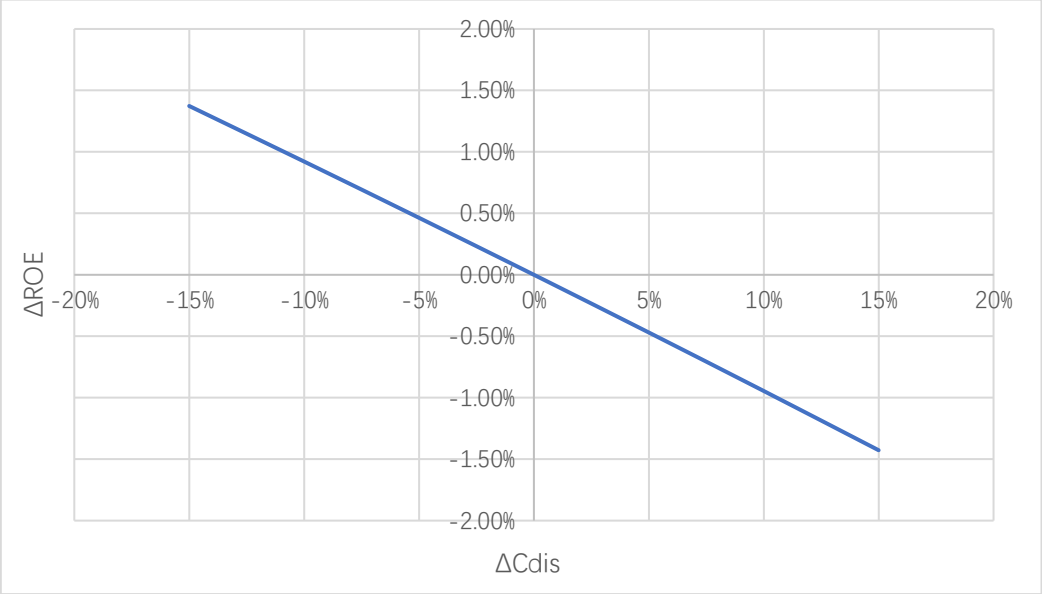
As we know in the connection of balance sheet and the income statement, the balance sheet is a photo of a firm in a given point of time, while the income statement explain the equity in a given period of time, after knowing this connection, we try to equal the balance sheet after the change. In the capital, we divide the equity into two parts: the earing after tax and the rest of the equity, just make the earning after tax here directly equals the earning after tax as the income statement.

In the meantime, in the asset, we add the cash as a variable in the asset, and we make the equation: we equal the cash equals the earing after tax minus the earning after tax

before change therefore, the balance sheet can be equal. We can finally get the right data of ROE after the change.

Lastly, we calculate the changes of the ROE from excel and the result is we can see the different changes of distribution cost to the changes of ROE.

Chart 4.19 Sensitivity analysis of ROE



As we can see from this chart 4.19, after the calculation of sensitivity analysis, we insert the scatter plot with smooth line, and the change of ROE move on the same direction of the changes of the distribution cost, the changes of ROE according to the changes of distribution cost is not linear and the changes of the ROE is pretty small as we can see from the chart, varying from -1.43% to 1.37%, it shows us that the distribution cost occupying a small percentage of the change of probability ratio of Skoda.

Above all, in the sensitivity analysis of probability ratio ROE, we come to a conclusion, the most influenced is the earing after tax and the equity, among the revenues and the asset, by calculating the influence of the distribution cost, we know the influence of the it is small. Therefore, if Skoda want to focus on the changes of ROE, after the pyramidal decomposition of ROE, the sensitivity analysis also shows the sensitivity in the changes, especially the earning after tax and the equity

5 Conclusion

Overview the whole thesis, we have a better understanding of the financial status and the management of Skoda, which is a Czech company with a tradition of automotive manufacturing dating back more than a century.

Through the previous three part, from the basic information of the methodology that we use in this thesis to the basic information of the Skoda Auto a.s, we have an overview of the financial performance in the 2013 to 2017. And in the core part of our thesis, we begin with the financial analysis in the chapter 3, typically the vertical and the horizontal analysis, we try to use different kinds of method to analyze the financial ratio in the beginning of chapter 4, all of these parts all the foreshadowing of the main idea of the thesis: the probability assessment of Skoda.

For a deeply exploration on the probability analysis, we firstly have the financial ratio analysis, which is the foreshadowing fore the pyramidal decomposition of ROE, and we use different kinds of chart and table to make a comparison in the financial ratios, and finally we decompose the ROA and ROE using different kind of method. And do the Sensitivity analysis individually.

In the pyramidal decomposition and the influence quantification, we have the ROA, and by doing the simple decomposition, we find out if Skoda want to have a better performance in the ROA, they should pay more attention to the net profit margin "EBIT/R" because it's the most important component ratio of ROA. For the core part, we decompose the ROE into nine part, and trying to explore deeply in the influence quantification, we put order of the influence of quantification, and find out that if the Skoda want to increase the probability ratio the attention should be paid to the costs, "Csal/S" and "Cadm/S", these two component ratio have influenced the basic ratio more than the other. It also applies in the comparison of Honda Motor Ltd. So, Skoda can focus on these two indicators to help company improve profitable performance.

In the sensitivity analysis, we apply two different kind of methods, the first is the one factor sensitivity analysis and the second is the multiple one, by applying these two

methods into the analysis of ROA and ROE, we find different reaction to the changes of the variables. In ROE, the most influenced is the earing after tax and the equity. Therefore, Skoda can increase the positive percentage change of sensitivity factor earning after tax especially.

In the end of whole analysis, we suggest the Skoda to have a better performance in the probability ratio, especially the administration cost and the earning after tax and remaining the history of hundreds year corporate.

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List of Abbreviations

A: Asset

ACP: Average collection period

Ca: Cash

Cdis: Distribution Costs

Cop: Operating Costs

Cadm: Administrative Costs

Csal: Cost of Sales

Cres: Rest of Op. Costs

D: Debt

EBIT: Earnings before interest and tax

EBT: Earnings before tax

EAT: Net profit

E: Shareholders' equity

FA: Fixed assets

IT: Inventory turnover

L-TA: Long-term assets

L: Liability

NPM: Net profit margin

ROA: Return on assets

ROE: Return on equity

ROIC: Return on capital

R: Revenue

S-TA: Short-term assets

TA: Total assets

TR: Tax rate

TL: Total liabilities

TAT: Total assets turnover

Herewith I declare that

— I am informed that Act No. 121/2000 Coll. — the Copyright Act, in particular, Section 35 — Utilization of the Work as a Part of Civil and Religious Ceremonies, as a Part of School Performances and the Utilization of a School Work — and Section 60 — School Work, fully applies to my diploma (bachelor) thesis;

— I take account of the VSB — Technical University of Ostrava (hereinafter as VSB-TUO) having the right to utilize the diploma (bachelor) thesis (under Section 35(3)) unprofitably and for own use;

— I agree that the diploma (bachelor) thesis shall be archived in the electronic form in VSB-TUO's Central Library. I agree that the bibliographic information about the diploma (bachelor) thesis shall be published in VSB-TUO's information system;

— It was agreed that, in case of VSB-TUO's interest, I shall enter into a license agreement with VSB-TUO, granting the authorization to utilize the work in the scope of Section 12(4) of the Copyright Act;

— It was agreed that I may utilize my work, the diploma (bachelor) thesis or provide a license to utilize it only with the consent of VSB-TUO, which is entitled, in such a case, to claim an adequate contribution from me to cover the cost expended by VSB-TUO for producing the work (up to its real amount).

Ostrava dated 1. 5. 2019

Min Gao 高敏

Student's name and surname

List of Annexes

Annex 1: Consolidated Balance sheet of Škoda Auto a.s. during period 2013-2017 (CZK million)

	2013	2014	2015	2016	2017
Intangible assets	21488	25168	25813	21483	23497
Property, plant and equipment	61446	65916	65642	64509	66060
Investments in subsidiaries	247	49	49	49	79
Investments in associates	2352	2352	2352	2352	2352
Other non-current receivables and financial assets	866	9047	11185	13575	12890
Deferred tax asset	1524	2607	3613	2870	1797
Non-current assets	87,923	105,139	107,654	104,838	106,675
Inventories	11,092	12,326	15,115	16,093	17,614
Account receivables	11,290	11,941	11,937	16,830	18,452
Other current receivables and financial assets	9,727	4,387	5,629	17,163	10,917
Cash and cash equivalents	64,087	71,532	94,961	73,256	97,201
Current assets	64,078	71,730	94,961	123,342	144,184
Total assets	**152,001**	**176,869**	**202,615**	**228,180**	**250,859**
Equity and liabilities					
Share capital	16,709	16,709	16,709	16,709	16,709
Share premium	1,578	1,578	1,578	1,578	1,578
Retained earnings	74,162	86,809	103,963	113,726	88,177
Other reserves	-2,133	-5,176	-4,768	5,567	11,020
Equity	**90,316**	**100,001**	**117,482**	**137,580**	**117,484**
Other non-current liabilities	4,820	7,898	5,744	4,164	3,450
Non-current provisions	7,774	10,509	13,197	14,270	13,302
Non-current liabilities	**12,594**	**18,407**	**18,941**	**18,434**	**16,752**
Current financial liabilities					
account payable	3,106	35,741	38,012	41,903	44,278
Other current liabilities	29,314	10,280	10,966	8,278	47,093
Current income tax liabilities	6,183	1,559	2,375	3,294	2,165
Current provisions	10,488	10,881	14,839	18,691	23,087
Current liabilities	**49,091**	**58,461**	**66,192**	**72,166**	**116,623**
Total equity and liabilities	152,001	176,869	202,615	228,180	250,859
Total liabilities	**61,685**	**76,868**	**85,133**	**90,600**	**133,375**

Annex 2: Consolidated Income statement of Škoda Auto a.s. during period 2013-2017 (CZK million)

	2013	2014	2015	2016	2017
sales	**243624**	**299318**	**314897**	**347987**	**407400**
Cost of sales	**209,538**	**254,944**	**268,184**	**295,232**	**347,519**
Gross profit	34,086	44,374	46,713	52,755	59,881
Distribution expenses	13,067	13,466	13,272	13,503	15,040
Administrative expenses	6,679	6,939	7,273	7,843	9,710
other operating income	6,024	5,230	18,779	6,498	13,397
other operating expenses	7,827	7,501	9,793	7,015	7,997
Balance of other operating revenues/costs	-1,803	-2,371	8,986	-517	5,400
Operating cost	231,087	277,720	279,743	317,095	366,869
Earnings before interest and tax	**12,537**	**21,598**	**35,154**	**30,892**	**40,531**
financial income	2,007	2,367	1,781	2,777	3,373
financial expenses	1,594	2,616	2,697	2,820	4,779
Financial result	**413**	**-249**	**-916**	**-43**	**-1,406**
Earning before tax	12,950	21,349	34,238	30,849	39,125
Profit before income tax-to-revenues ratio	5.3	7.1	10.9	8.9	9.6
Income tax expense	1,564	2,928	3,422	5,686	7,284
Earning after tax	**11,386**	**18,421**	**30,816**	**25,163**	**31,841**

Annex3: Improved Cash flow statement of Škoda Auto a.s. during period 2013-2017(CZK million)

	2,013	2,014	2,015	2,016	2,017
Cash flow from operating activities	28,965	45,158	39,622	50,426	60,811
Cashflows from investing activities	-25,148	-25,512	-6,467	-24,051	-17,996
cash flow from financial activities	-6,629	-8,693	-13,753	-15,400	-18,870

Annex4: Pyramidal Decomposition of ROE during period 2013-2017

Table Pyramidal Decomposition of ROE during 2016-2017

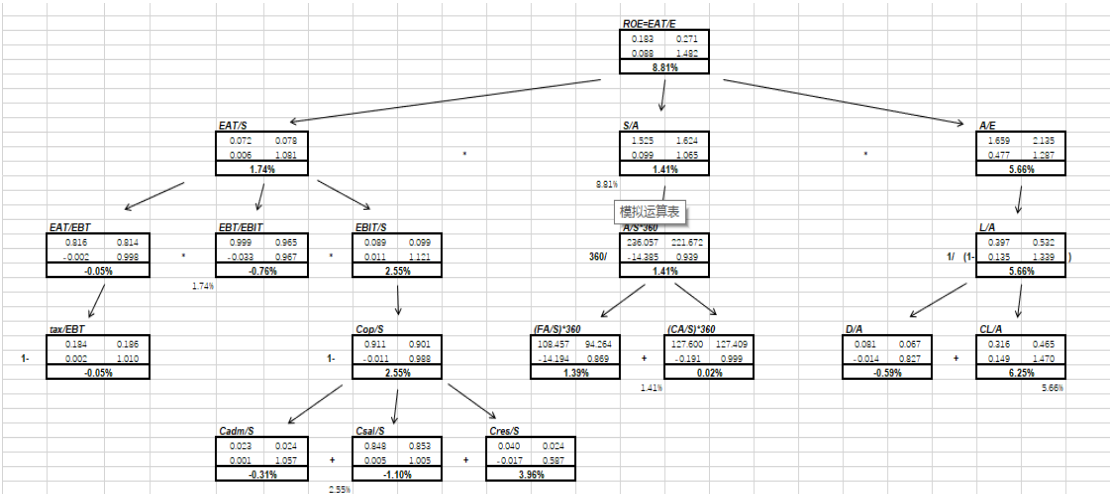


Table Pyramidal Decomposition of ROE during 2015-2016

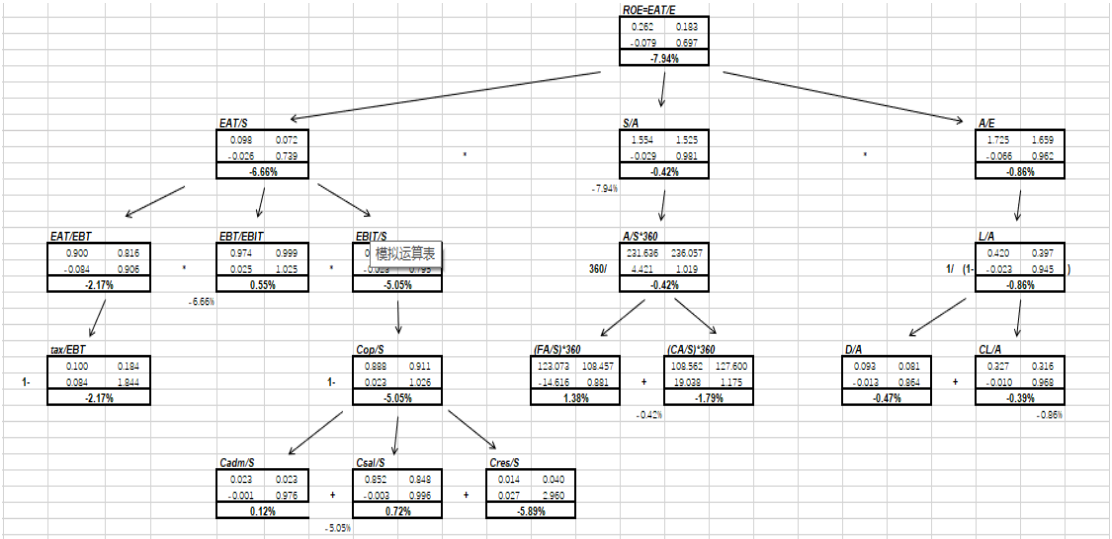


Table Pyramidal Decomposition of ROE during 2014-2015

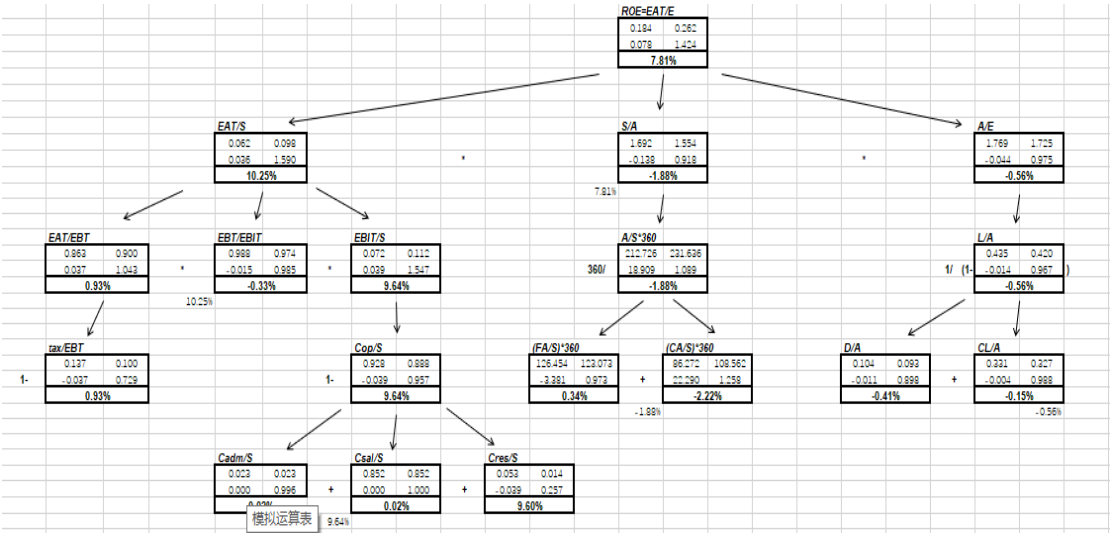
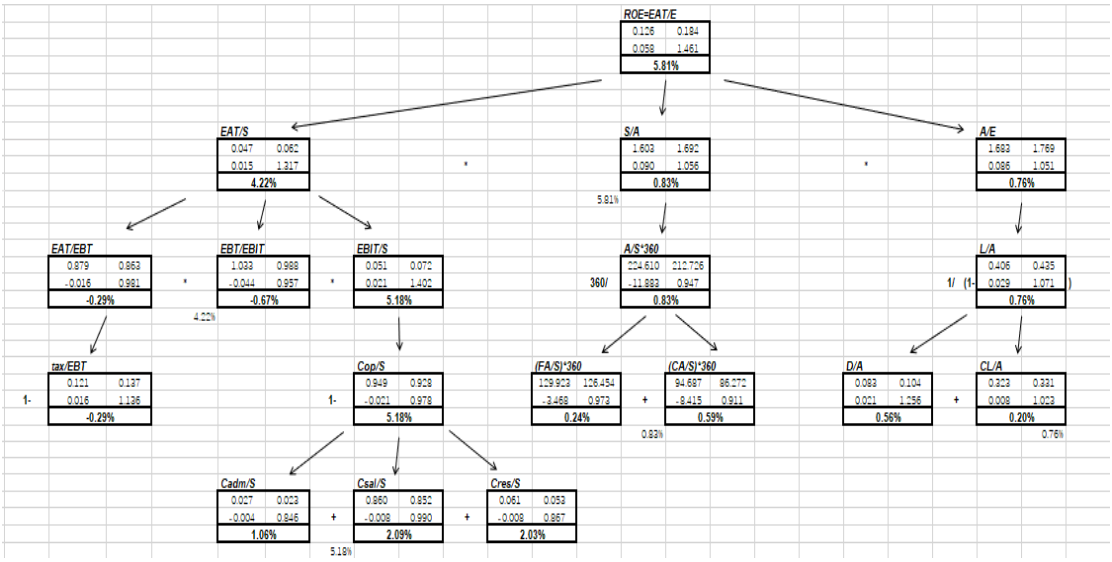


Table Pyramidal Decomposition of ROE during 2013-2014



Annex5: Pyramidal Decomposition of Škoda Auto a.s. and Honda Motor Co.Ltd.

Table: Pyramidal Decomposition of Skoda and Honda in 2017

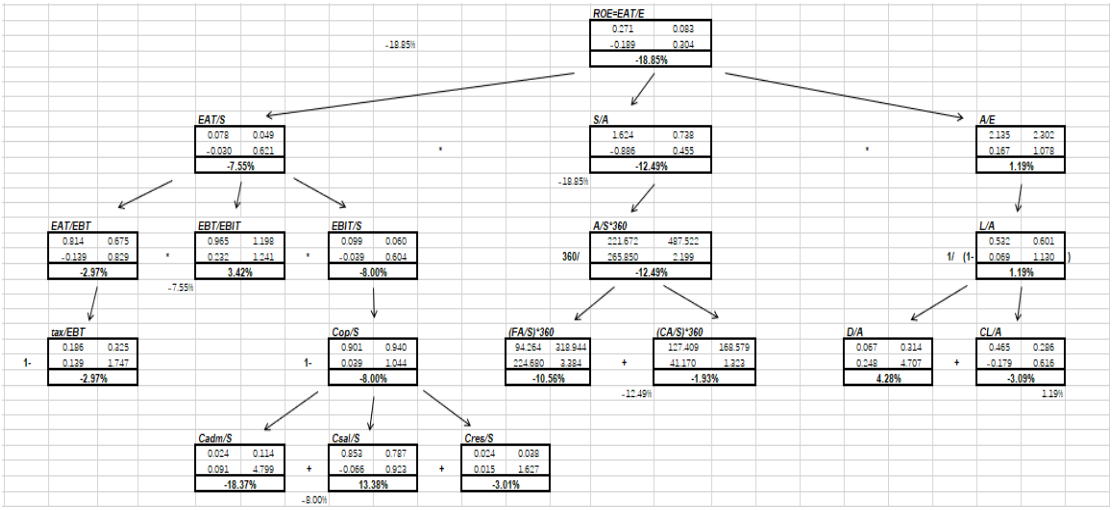


Table: Pyramidal Decomposition of Skoda and Honda in 2016

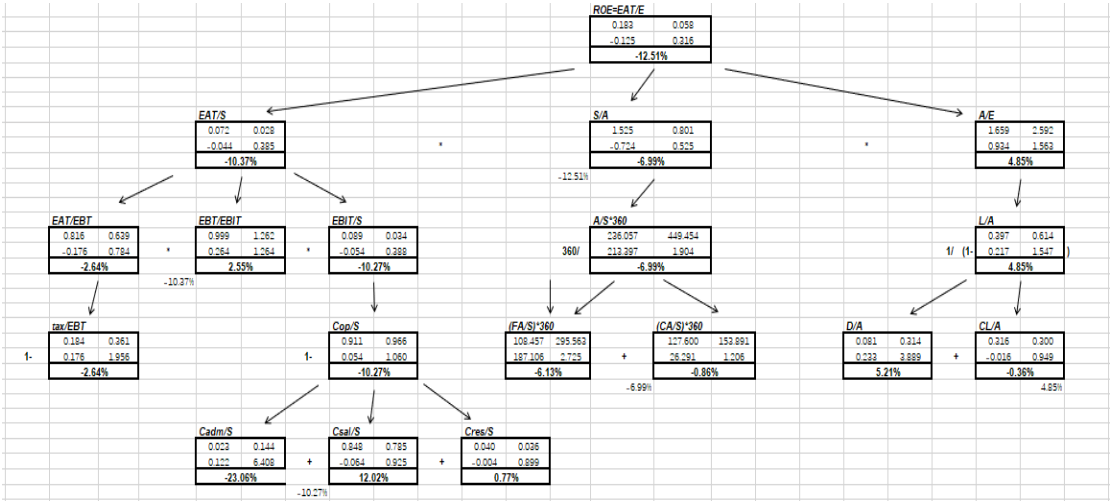


Table: Pyramidal Decomposition of Skoda and Honda in 2015

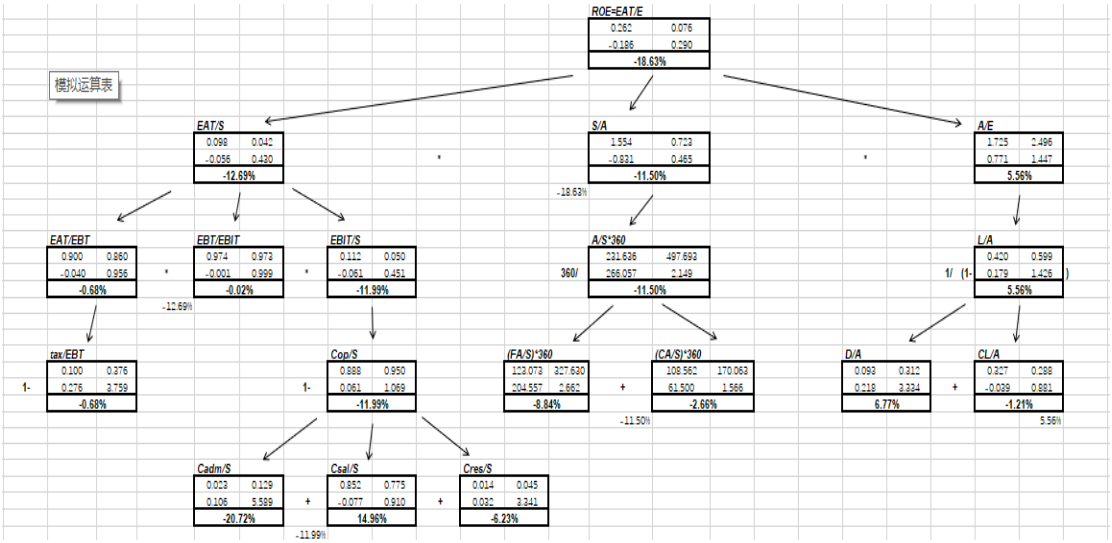


Table: Pyramidal Decomposition of Skoda and Honda in 2014

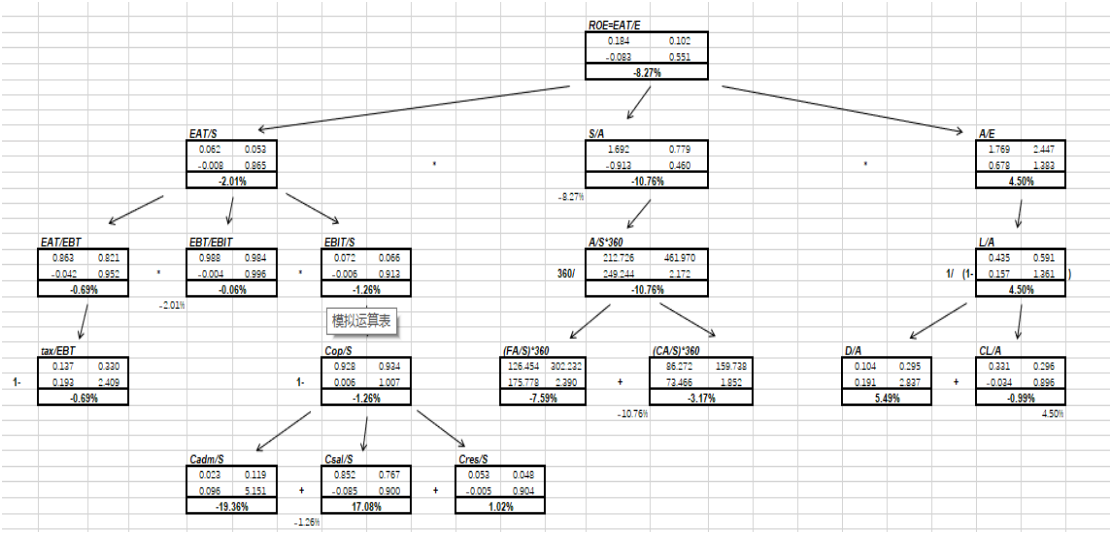


Table: Pyramidal Decomposition of Skoda and Honda in 2013